

CONCRETE
for BEAUTY,
ADAPTABILITY
AND PERMANENCE.

HELM
BRICK MACHINE CO
Cadillac,
Mich.

This is the Guarantee Which Stands Back of all
Helm Equipment

Certificate of Guarantee

This is to Certify, that any Concrete Machine listed in this catalog is guaranteed to be perfect in material and workmanship, to be just as represented, to work perfectly and have the capacity claimed when worked properly and in accordance with directions. For 365 days from date of shipment we agree to replace Free of Charge at the factory any parts that prove defective through fault of material or workmanship. We guarantee safe delivery of all shipments. In case a machine is damaged you are to have the freight agent carefully note the damages on the freight bill. Send it to us with order for the necessary repairs and we will furnish them FREE of charge.

HELM BRICK MACHINE COMPANY,
Cadillac, Michigan.

THE HELM BRICK MACHINE COMPANY
CADILLAC, MICHIGAN

319-15

The Great Opportunity in America Today

Every age offers some predominating opportunity. This is the Concrete age and concrete offers the greatest opportunity today. You may be so closely connected with this business that you do not see the opportunity or you may have never investigated and consequently are not alive to what it offers you. Therefore we urge that you carefully consider the suggestions which follow.

Concrete is the Coming World's Greatest Industry

There is every reason why the concrete industry should be the world's leading industry.

It should even outstrip the iron and steel industry.

Men of brains are turning to it with a feeling of certainty that the highest success will be theirs—financial success—independence and everything that goes with these hard won positions.

Nearly every building—no matter whether skyscraper or dwelling—must depend in some degree upon concrete and the concrete industry.

The forests are going. Indeed they have almost disappeared.

What shall take the place of wood?

The answer is: "CONCRETE."

And the man who gets into the business on the ground floor is the man who will be ready to take care of the big rush of business which is soon to begin.

Indeed this great rush already has started.

Millions already have been made out of this industry.

And millions more are being made every year.

The man who has not yet started should lose no time.

The man who has started should select the best machines that are to be found any place.

And the best machine for the man who has started and for the man who has not started is the **HELM PRESS**.

In the pages that follow we show you first why you should get into the concrete industry if you are not in it already whether on a big scale or on a small scale.

Then we prove to you that when you do get into the concrete industry or when you enlarge your present business, if you are a part of the industry already, you should buy the Helm concrete machinery.

No matter how small the scale on which you might have to start. There is such a field ahead of you that even the greatest brain cannot conceive half of its magnitude.

The greatest inventor that ever lived—Thomas A. Edison, the "Wizard of the Twentieth Century" has said that if he were not too busy with his electrical apparatus he would go into the concrete business.

Edison was one of the first men to see a great future in the electrical business.

Now he sees a great future in the concrete business.

Mr. Edison went into the electrical business, and he is many times a millionaire.

Those who followed him are also millionaires.

At that time the concrete business was not thought of. It was not thought of because there was no need for concrete. The forests were seemingly inexhaustible.

There was no more demand for concrete then than there was for electrical apparatus a hundred or so years before Edison's time.

But the concrete age has come. Hundreds of men have looked a few years ahead and they have seen riches.

Many others are looking ahead every day and they, too, are starting on the concrete road that cannot help but lead to success.

We want you to make a start today if you have not started already.

We are sending out this catalog to influence you to start. Or if you have started we want to convince you that if you have not yet installed the Helm Machinery you should do so.

And in the pages that are to follow we will show you WHY.

You will find an order blank enclosed. Read it. Read the liberal terms of payment we offer. Then send your order for a Helm Press. No matter if you haven't any business in sight. The business will come after you get your plant in operation.

The store keeper cannot do any business until he gets his store in readiness to receive customers.

Marshall Field, the great Merchant Prince, would never have become the greatest merchant in the world if he had said: "I don't know where my customers will come from."

And if you have started and have customers already the way to keep them pleased and coming to you is to give them the highest class products that can be made, and there can be no better products than those made by the Helm Machines.

Whether you have a large factory or a small factory you should have the best machinery. And we will prove to you that the best machinery is the Helm machinery.

The Helm Machinery is the best machinery for the man who already has a concrete factory.

It is the best machinery for the man who expects to start a concrete factory.

It is the best machinery for the man who wishes to make brick or blocks with which to build his own house.

Handsome Profits are Yours if You Supply the Building Trade with the High Grade Products of the Helm Press

It does not matter to the buyer whether your plant is in a tumble down shack or in a splendid factory if you can sell him the very best article that can be produced and make him a price that is right.

The buyer wants something that will make a dry, sanitary building that will present a better appearance and that will be cheaper for him to use than inferior competitive products.

The Helm Press products are the kind he is looking for. You never inquire about the size of the factory that makes your hat, your shoes or any other article that you buy, but you do insist on knowing that you get the best article your money can buy.

It is the same with the man who establishes a concrete factory. If your product is good it does not matter whether it is made in a back yard, shed or a big factory.

The man who puts thousands of dollars into his buildings wants the very best materials his money can buy.

The cry today is for buildings that do not burn, that are always dry, that never deteriorate in appearance or substance and that are always rich in appearance.

The principal questions are, how the product compares with others, its cost, its appearance, its value as a practical building material and its adaptability to every requirement.

Practicability is stamped all over the Helm Press and everything that it produces. Each product stands out big in its practical usefulness.

The biggest factor prejudicing the public against concrete is the idea that it will not make dry buildings.

Helm Presses and the DRY WALL two-piece block system have overcome this.

Extravagant claims have been made that because of the air space in the ordinary hollow block, it would make dry buildings without furring and lathing. This has caused builders and those inexperienced to follow such absurd suggestions and consequently many damp, unsanitary hollow block buildings have been erected developing a resistance to this type of construction.

This is entirely overcome by our Helm DRY WALL System.

In Conclusion

First of all we advocate a practical building system, then a suitable product to conform to it and finally a press for its rapid production. We want to impress these three points on you in such a way that you cannot possibly forget them. They are so vital to your success in the concrete business.

The Helm DRY WALL System

The very first essential in the concrete business is a practical building system and this must be a DRY WALL system. It must also secure durable walls. We invite the most intelligent consideration of the system described and illustrated in the following pages, knowing it will meet with the highest approval.

This DRY WALL System is not New—It is not an Experiment It has Been Tried and Proven

We proclaim no mysterious secrets and sell no patented theories.

We simply bring you a sane, practical method of making and using concrete blocks and brick so buildings will always be DRY, constructed cheaper than ever before, yet durable, substantial and beautiful in appearance.

Ask any reliable builder with years of experience, or you may be familiar with it and he will tell you at once the idea of a continuous air space between two courses of brick or stone which are tied together with metal ties has been in use for decades and that a complaint has never been made that such a building is damp and unsanitary.

So we are putting into use a proven, practical method whereby buildings made of concrete or brick are absolutely dry and warm.

It is a success and the only practical, successful way.

Read this Quotation from one of the Highest Building Authorities in the United States:

"Moisture will penetrate clay brick walls even 12 inches to 16 inches thick, affecting plaster, wall paper and fresco decorations. Damp walls necessitate the consumption of more fuel because the moisture must evaporate before the temperature of the room can be raised. To overcome this walls are furred to create an air space. Danger from fire spreading through these strips causes many excellent authorities to recommend hollow walls."

With the Helm DRY WALL system the outer wall braves the elements. The continuous air space prevents any connection between the two walls and the inner surface, therefore, always remains dry and warm.

Buildings will be more easily heated, a uniform temperature more easily maintained, expensive repair bills will be prevented because plastering, decoration or wall paper will never be affected by moisture as has happened many times in hollow block houses which were not furred and lathed.

The Annual Saving Pays for a Home in Twenty Years

On the ordinary common brick house or frame house the annual cost of repairs due to shrinking, cracking of plaster, opening of joints of the trim, rotting of woodwork, settlements, painting, decorating, shingling and other like items is usually represented as 5 per cent. of initial cost.

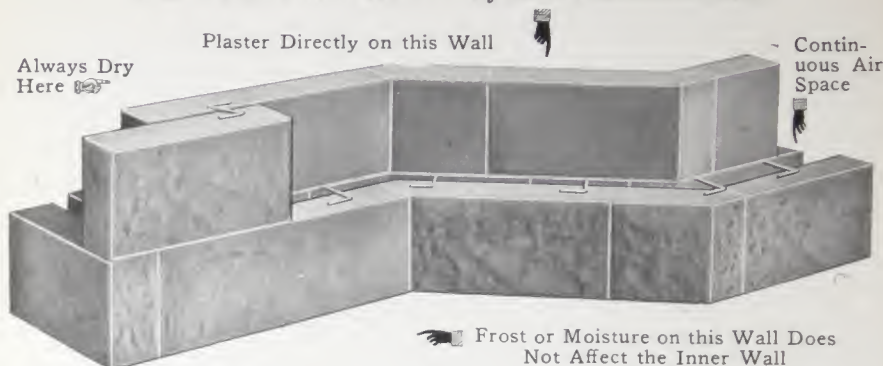
On a \$5,000 house this amounts to \$250 annually. Using Helm Press products will save 90% of this and will reduce the heating cost 30% per annum. These figures will make this clear.

Repairs and depreciation 5% of \$5,000.....	\$250	90% saved	\$225
Annual cost of heating.....	\$100	30% saved	30
Total amount saved annually by using Helm Press products.....			\$255

Any reliable architect will confirm these figures.

We do not merely ask you to accept this system as the best because of what we have already told you about it. We propose to demonstrate to you the reason why it is the best and on the following pages you will find this demonstrated. You will see that this DRY WALL system is incomparable. Furthermore you will agree that it is the practical way to build.

The Helm DRY WALL System Demonstrated



A rigid wall that will carry enormous loads.

A wall that is always **DRY**.

A wall that makes buildings warm in winter and cool in summer.

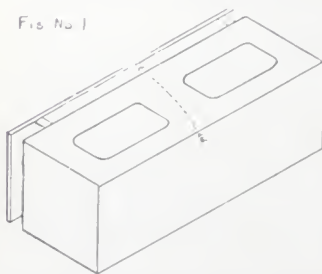
How to make buildings warm and dry is always the decisive feature and here is the rare combination of DRY WALL construction and a suitable product, made by pressure, combining to make the most rigid walls and very artistic in appearance.

The wall is double, each course is usually 4 inches thick. The air space is 2 inches more. No cement bond obstructs this air space at any point. There is no connection from exterior to interior to carry moisture and make a damp, unhealthful and unsanitary building. Notice how perfectly the blocks bond and break joints. No detail is left unsolved. Rough blocks are used for the inner course and a block with a richer facing applied for the outer course.

Where the Cement Bond Goes Through, Moisture is Sure to Follow

You will see by this illustration of the ordinary hollow block that a solid cement bond runs from surface to surface. We want you to see how inferior it is to the block made by the Helm Press. It is more expensive, too.

Fig. No. 1



The arrow shows where moisture and frost get through. They follow the solid bond which connects the outer and inner shells.

Capillary attraction causes it the same as it does in clay brick or stone walls. The only way to make this block wall dry is to fur and lath it as illustrated. This creates a true air space.

The furring, lathing and rough coat of plaster for the surface of this block, size 8x24, will cost 4 cents. This amount is wasted every time one of these blocks goes into the building. Just a moderate size building requiring 2,000 such blocks means a needless expense of \$80. Furring and lathing will convert such a building into a fire trap. Helm Press DRY WALL products save this needless expense and make dry, sanitary, fireproof buildings.

The Facts About Capillary Attraction

Trees and all vegetation bear out the theory of capillary attraction by drawing moisture from the ground through numerous tiny cells. Water does not run up hill but it must get there before it can run down and capillary attraction does it. Every time you blot a letter you depend on the action of capillary attraction. Place a little water in a receptacle and see how quickly a sponge will absorb it all. Yet the sponge is made up of numerous air spaces. This is capillary attraction and the air spaces is no way prevent its action. This is the very same principle which causes moisture to go through hollow block walls or brick and stone walls. The only way to prevent capillary attraction is to break the bond. Our form of wall construction does this.

The Helm System From Cellar to Garret

Sketch A is a cross section of the elevation from basement floor and footing for foundation to the roof of the building. The detail is as follows:

Fig. 1 is the grout concrete footing to form a suitable bearing surface for the basement wall.

Fig. 2 is a section of the basement wall below the grade line. This shows how the two-piece blocks can be used for the foundation and thus make the basement absolutely waterproof and frostproof.

Fig. 3 is a sill on which the basement window frame rests. A cross section of this is shown in sketch B. The frame is held in position by the wind stop as indicated.

Fig. 4 is the water table which runs clear around the building. This should be long enough to rest on the blocks at each side of the window and should be reinforced with rods.

Fig. 5 is a window sill made double like the two-piece blocks and tied together with metal ties or a metal plate. Sills can be made this way or similar to the one illustrated by Fig. 3. It is better to use the two-piece system, then there is no chance for moisture to get through the wall around the window. Sketch C shows a cross section of the box window frame. The wind stop ties this frame to the double wall.

Fig. 6 is a window cap which should span the opening the same as in Fig. 4. This should also be reinforced with rods.

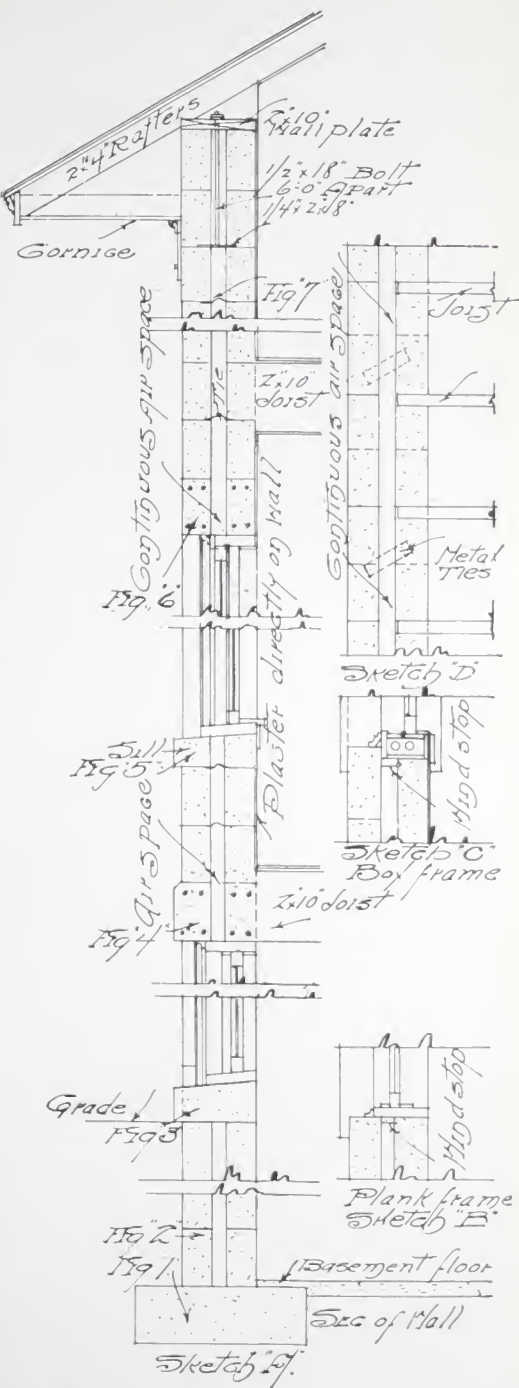
Fig. 7 shows the wall tie of galvanized wire or iron. These ties are used in every fourth or fifth course.

Sketch D is a horizontal cross section of a wall showing how the joists are placed between 16 inch blocks. The blocks in the outer wall can be 16 or 24 inches long.

The balance of the sketch is self explanatory. A 2x10 wall plate is used on top of the blocks to which the rafters are fastened and this plate is anchored by bolts placed 6 feet apart in the wall, reaching down to the mortar joint in the second course below in which a small plate is inserted as illustrated.

Where brick or short blocks are carried over windows and doors instead of a long cap, angle iron is used to relieve the frame of the load. This detail applies to either block or brick walls or combination brick and block walls. No method could be more simple than this.

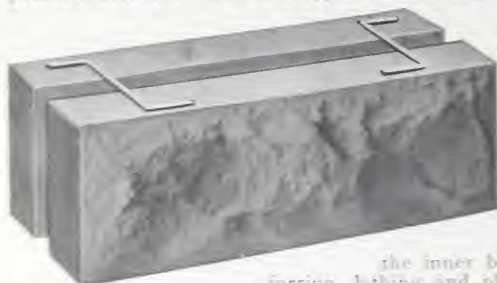
By this system the building is constructed with a continuous air space throughout. At no point will moisture have a chance of getting through the wall for there will be no cement bond to carry it. This saves the cost of furring and lathing because the plaster is applied directly to the inner wall with perfect safety.



This is the Only Successful Way to Make DRY WALLS

The only successful way to make dry walls is to break the bond between the outer surface and the inner surface. This is the Helm system. At no point does a bond of cement or mortar connect the outer and inner walls. The continuous air space between the two walls, whether it be 1 inch, 2 inches or more, absolutely prevents frost or moisture from passing to the inner wall. This is also the reason why buildings put up by this system are warm in winter and cool in summer. The double walls separated by the continuous air space will not conduct heat or cold as a solid wall or a wall made of hollow blocks will.

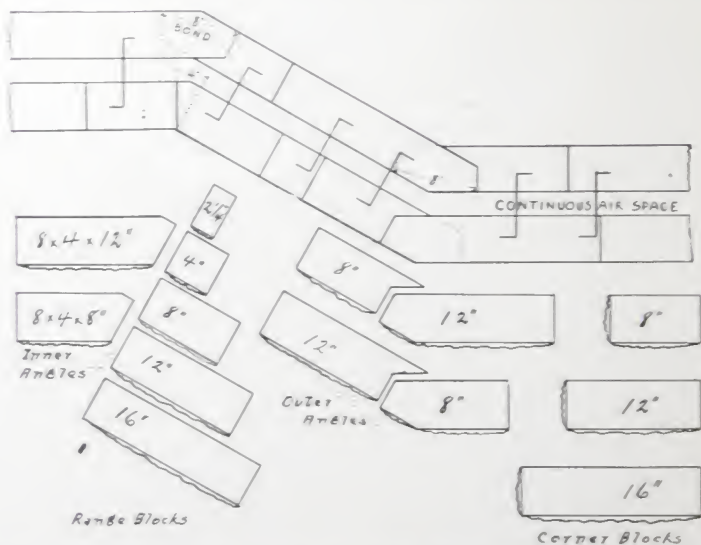
You will find this same principle demonstrated in the thermos bottle, refrigerators, and fireless cookers. A double wall is used in each instance. This principle is just as practical and successful when applied to buildings as when applied in these other forms.



As illustrated, galvanized wire ties are laid in the mortar joints to tie the two walls. It is just like reinforcing placed in the mortar joint without being near the outer or inner wall surface. One tie is used to each block in every fourth or fifth course. The ties will not rust. They are inexpensive, only costing about \$5.00 for a dwelling.

The finishing coat of plaster is placed directly on the surface of the inner block. This system saves 4 cents in tarring, lathing and plastering the surface of one block 8 inches by 24 inches. With this system buildings are sanitary, fireproof, frostproof and waterproof.

This System Provides Practical Bay Window Construction



For inner angles you will see that the angle blocks can be made 4 inches to 16 inches long. The plain blocks to be used with these range from 2 1/4 inches to 24 inches long. For the outer angles either block can be made from 4 inches to 16 inches long. In connection with the variety of lengths in straight blocks this set of angle attachments far exceeds any other equipment for this purpose ever offered.

Combination Brick and Block Construction

This is another immensely practical feature of the Helm building system.

It is better and cheaper than clay brick construction.

The blocks for the inner wall are as cheap as the cheapest clay brick.

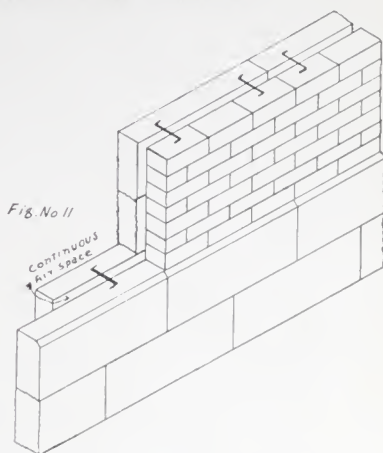
The pressed faced brick, while cheaper, are equal in appearance to the highest priced repressed clay face brick.

Two courses of the coarse backing blocks will bond with 7 courses of the Helm pressed brick.

Such a wall will have the continuous air space throughout. The inner and outer walls are connected with the metal ties. This will save furring, lathing and rough coat of plaster.

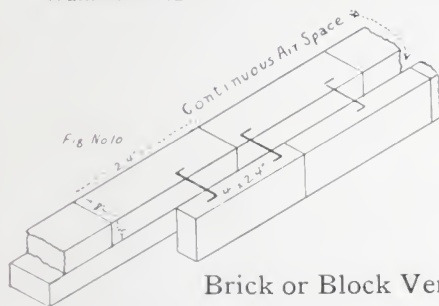
Such a building will always be dry, warm in winter and cool in summer.

This form of construction is of special importance in competing with the very cheapest clay brick construction, no matter how cheap the brick may be.



Heavy Bearing Wall Construction For Warehouses and Mills

Walls from 12 inches to 16 inches thick are made by laying the regular block flatwise. Two of these blocks including the mortar joint for the inner wall will equal one of the blocks laid edgewise for outer wall. The air space can be made any thickness desired.

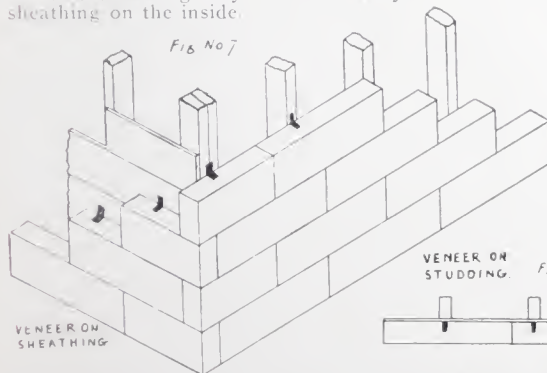


Partition Walls

Partition walls can be constructed of a 4 inch course of blocks laid edgewise. The finishing coat of plaster can be applied to either side. This also does away with a runway for fire.

Brick or Block Veneer Construction

The veneering may be tied directly to the sheathing or to the studding with the



This makes a cheap form of construction for new buildings. When completed it cannot be distinguished from solid brick or block walls. A 4 inch course of brick or blocks is tied directly to the studding or sheathing.

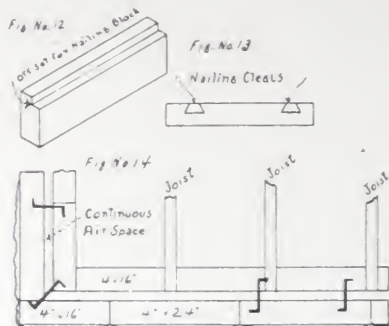
This makes a warm, dry building and is a very popular method of building.

By this method old wooden buildings are improved so they look like new cement buildings by using our Pressed blocks or brick for veneering.

When a building is veneered with these pressed cement brick or blocks it will be very easily heated. It will be warm in winter and cool in summer. The blocks and the brick can be combined in this veneering. Blocks can be used for the basement and first story and brick for the second.

Complete in Every Detail

No detail is left unsolved to worry the operator of a Helm Press in meeting the most exacting requirements of any architect.

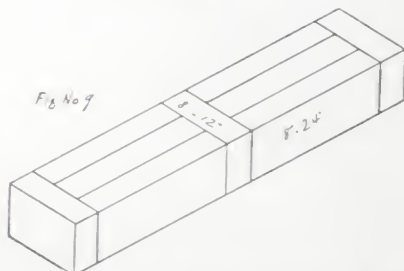


The illustration above shows two essential features taken care of by the Helm equipment.

Nailing cleats can be inserted in any of the blocks made.

16 inch blocks can be used in the inner wall between joists, thus taking care of every possible contingency.

The illustration below shows how veneer blocks can be laid in the form of hollow blocks, having a header bond course to tie the wall. This secures a beautiful effect and can be safely used wherever a hollow block could be used.



Chimney and Pier Construction

The series of illustrations at the right show how successfully the Helm Press blocks can be used for piers and chimneys. Any size or design of chimney or pier can be made with these products.

The lower illustration shows the beautiful effects that can be secured in this work, also in block work in the regular walls in the manner of breaking joints.

With the blocks made in such a variety of lengths it is an easy matter to break joints properly in laying up piers or chimneys. This is a very rapid and satisfactory form of chimney construction.

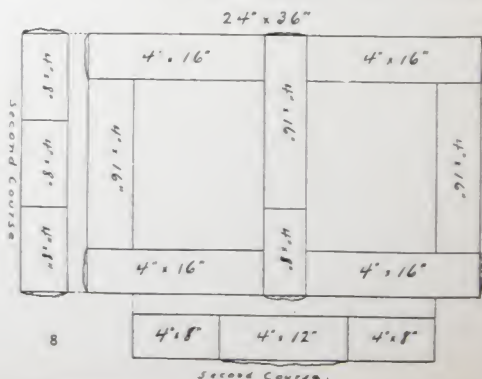
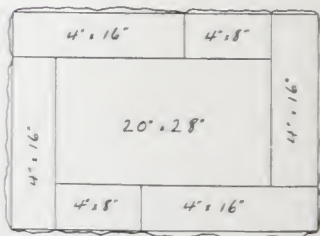
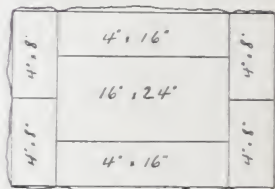
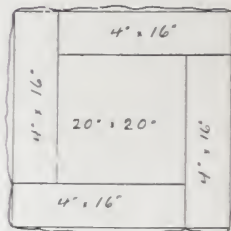


Fig. No. 16



Cost Basis for Pressed Cement Blocks

100 Single Pieces, Proportion Five Parts of Sand and Gravel to One Part of Cement.

24 Inch Blocks.

2 barrels of cement,
1½ yards of sand,
7 to 10 hours labor.

16 Inch Blocks.

1½ barrels of cement,
1 yard of sand and gravel,
7 to 10 hours labor.

A fair average selling price of the 24 inch blocks estimated above is 12 cents apiece and 9 to 10 cents apiece for 16 inch blocks. These figures of course will be subject to change to correspond with local conditions.

Where the mixing is done by hand one entire day's labor may be required to take care of everything from raw material to yarded product. The profit on blocks can readily be increased 25 to 50% by putting out faced blocks, especially blocks having a white facing or the granite texture. These blocks will compete with all grades of brick and with other building materials. The blocks can be used for laying up the two walls in accordance with the DRY WALL building system. Partition walls can be constructed of single 4 inch courses with the plaster applied on each side.

The cost of laying these blocks averages from 2½ cents to 3 cents apiece. The 4x8x24 inch block equals 9½ brick in the wall. The 4x8x16 inch block equals 6½ brick in the wall. With these blocks the furring, lathing and rough coat of plaster is not required, which means a saving to the builder of 4 cents to the surface of each 24 inch block. With these blocks selling at 12 cents apiece and the cost of laying 3 cents apiece the cost per square foot for double wall is 26 cents. This compares favorably in cost with any type of construction. It will make a dry, sanitary building provided with rigid and durable walls.

In every community there is a field for these products and the profits are enormous. You can apply your own figures and estimate for yourself just what you can do.

Hints on Estimating

The following rules show how to estimate the number of blocks required for a building of any dimensions:

To find the number of 16-inch veneer blocks in one course around the wall, multiply the number of feet around the wall by three and divide by four.

To find the number of 16-inch two-piece blocks for the double course around the wall multiply the number of feet around the wall by 3 and divide by 2.

To find the number of 24-inch veneer blocks in one course around the wall divide the number of feet around the wall by two.

The two-piece wall of 24-inch blocks will require as many blocks for one double course as there are feet around the wall. For example, a 20x30 building has 100 lineal feet, so the course around the wall requires 100 blocks to make the double wall.

The height of the wall in inches divided by 8 gives the number of courses. Multiply this by the number in one course and the total number of blocks for the building is secured. These rules do not take window or door openings into account.

One square, 100 feet, of 4-inch wall requires the following material when laid with ¼-inch mortar joint:

73 24-inch x 8-inch blocks, or
110 16-inch x 8-inch blocks, or
700 2¼-inch x 8-inch brick.

One 4x8x24-inch block equals 9½ brick with ¼-inch joint in the wall.

One 4x8x16-inch block equals 6½ brick with ¼-inch joint in the wall.

One yard of sand and one barrel of lime will make sufficient mortar to lay 1,000 brick or 600 blocks 4x8x24 inch, which would be equivalent to 5,700 brick in the wall.

The thickness of bearing walls for any building where cement blocks are used may be 10 per cent. less than is required by law for clay brick walls.

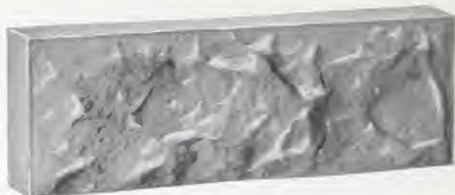
For curtain walls or partition walls the requirements shall be the same as in the use of hollow tile, terra cotta or plaster blocks.

Walls shall not be loaded to an excess of eight tons superficial foot of the area of such blocks including the weight of wall.

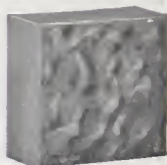
The Various Pressed Blocks Required

The rock face designs are taken directly from the natural stone. Each block is perfectly true and uniform in every respect. Just as true as the pressed brick. By pressure a very pleasing texture on the face is secured. Corners and edges are all sharp and uniform.

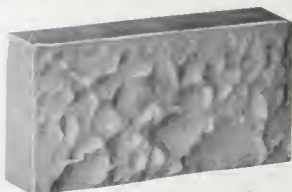
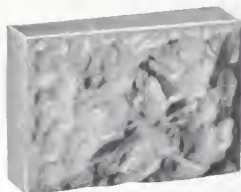
Rock
Design
23 $\frac{1}{4}$ "



Rock
Design
5 $\frac{3}{4}$ "

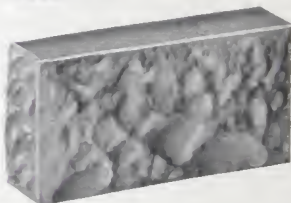


Rock
Design
11 $\frac{1}{2}$ "
and 4"
Lengths



Rock
Design
15 $\frac{3}{4}$ "

Rock
Face
Corner
4" & 8"
Lengths



Face
Corner
15 $\frac{3}{4}$ "

Plain
Design
23 $\frac{1}{4}$ "



Plain
Design
5 $\frac{3}{4}$ "



Plain
Design
11 $\frac{1}{2}$ "
and 4"
Lengths



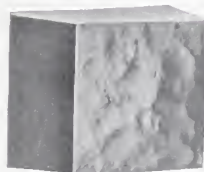
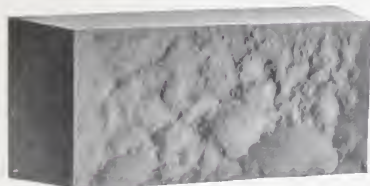
Plain
Design
15 $\frac{3}{4}$ "

The above thirteen designs of plain and rock face blocks will fill every requirement for straight work in the Helm DRY WALL building system. These blocks are regularly made 4 inches thick but can be made as thin as 2 $\frac{1}{2}$ inches for veneering. They lay 8 inches high.

For the DRY WALL Building System

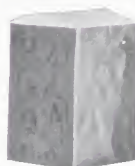
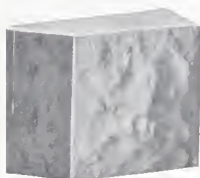
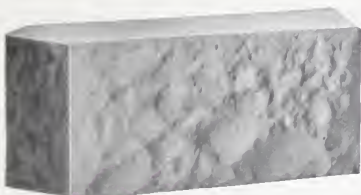
This great variety of angle blocks completely takes care of bay window construction and preserves the continuous air space throughout. To complete the inner angle a plain or rock face block shown on opposite page is also used.

Rock
Face
Inner
Angles



15 3/4"
8" &
4"

Rock
Face
Outer
Angles



15 3/4"
8" &
4"

Plain
Face
Inner
and
Outer
Angles



15 3/4"
8" &
4"

Rock
Face
Outer
Angles



15 3/4"
8" &
4"

Plain
Face
Outer
Angles

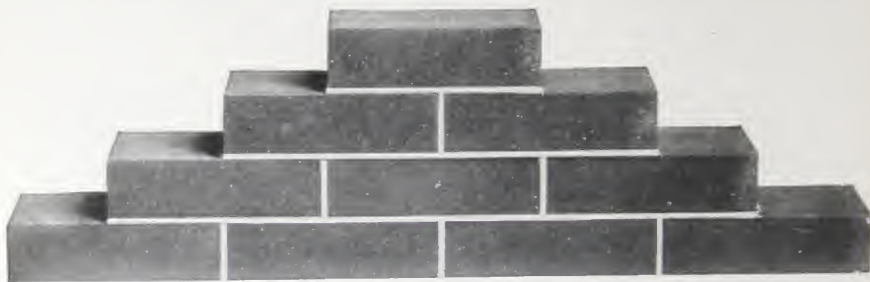


15 3/4"
8" &
4"
Lengths

Many different shapes can be worked out on the end of these blocks by simply using wooden shapes to form the ends as the blocks are pressed. For instance, special forms can be made to fit around the window and door openings or to form corners.

Fortunes Are Made in Brick

The best brick are pressed brick, and pressed brick are a Helm product. These brick are perfectly true and uniform in every respect. The edges are sharp and strong.



Each year in every hamlet, town and city thousands upon thousands of brick are used. For ages brick construction has been recognized as one of the highest types, even from the sun-baked brick of Egypt 4,000 years ago, down to the present minute. And in all this time **BRICK MAKERS HAVE BEEN MONEY MAKERS.** They have amassed immense fortunes. They have been money makers because they provide a necessity of life. Brick are just as staple as the clothes on your back or the food that you eat. Just think of this.

TEN BILLION BRICK Are Used Annually in the United States

33½ million brick are used each working day of the year. This should be doubled and even trebled for in spite of the present output builders must beg for brick and, too, the demand continues and even increases in spite of concrete and all its vast possibilities, for brick construction is always pleasing, attractive and distinctive. But clay deposits are fast being exhausted. Cheap wood for burning is going and prices for even the poorest, cheapest clay brick are mounting skyward. For these reasons as a home industry clay brick making is losing out. Today it is becoming a centralized business where the good clay deposits still exist but this means transporting the product to the market at high prices. Thousands of towns and cities are crying out for local brick plants to supply their own needs satisfactorily and economically.

This is Your Great Opportunity

No matter where you are, how little the town, or how large the city, for every community is a market place for brick. A great opportunity is knocking insistently at your door today. **NOW**—to get into the brick business—to make brick without clay and without burning—to make brick that surpasses clay in quality. Right in your community you can start a pressed brick plant which will be a home industry and which will appeal to home people. You will make enormous profits by doing this. You can turn out pressed brick which will be perfectly true and uniform, which will compete with common clay brick in price, which are laid easier and quicker than clay, which are stronger, absorb less moisture, and at the same time are more frostproof and fireproof.



The beautiful ornamental designs of Helm pressed cement brick, made in any color.

The Profits in Pressed Cement Brick

This is the feature which is of vital interest to you. We give quantity figures herewith based on using a Helm Press. By using your own costs of material and labor you will have accurate manufacturing costs for your locality.

Cost Basis for 1,000 Pressed Cement Brick

5 parts of sand to 1 part of cement.
(To compete with ordinary brick.)

2 barrels of cement,
1½ yards of sand,
7 to 10 hours labor.

4 parts of sand to 1 part of cement.
(To compete with pressed brick.)

2½ barrels of cement,
1¼ yards of sand,
7 to 10 hours labor.

This estimate covers the cost of manufacturing brick which will sell for from \$10 and up per thousand. The labor is estimated at about 7 hours to cover the making and yarding of 1,000 brick. This is based on using a mixer. With hand mixing one day's labor will be required instead of seven hours to cover the entire labor cost.

To compete with ordinary brick, kiln run or selected, the pressed cement brick made from 5 to 1 proportions will be used. The selling price of this brick varies greatly but will average \$10 per thousand. The brick made from 4 parts of sand to 1 part of cement as estimated in the second column above will sell on the average for \$14 a thousand.

Where materials are expensive, brick are correspondingly higher, and a fair profit will always be made in the manufacture of concrete products. The selling prices above mentioned are a fair average for all localities. If the sand supply is owned by the plant it will never cost over 20 cents a yard while if the sand has to be bought from the outside the average price is about 75 cents per yard. So it is of great advantage to the manufacturer to own his own sand as this will greatly increase the profit or permit a lower selling price for the products. Pressed cement brick at \$10 a thousand are really cheaper for the purchaser than ordinary clay brick at \$8 or \$9. There are no brickbats to contend with. The brick being true and uniform, lay faster and furthermore, they do not chip off and deteriorate after being placed in the wall.

Big Profits in Faced Brick

By our patented face up pressure system a facing of ¼ inch or even thinner can be applied to the pressed brick or blocks. Beautiful and enduring colors in red, brown, buff and many additional tints are secured by using the special formulas which are furnished free to every purchaser of Helm equipment. To the cost of 1,000 4 to 1 brick, as estimated above, would be added \$1.50 per thousand brick which are faced red, brown, buff or other shades, and which sell for \$16 and up. If the 5 to 1 brick are faced in this manner and used as face brick the total cost will be less making it possible to sell them at \$14 a thousand and realize handsome profits. A facing of white cement and sand will cost about \$2 for 1,000 brick and they will bring 50% more profit than plain brick.

Granite Faced Brick Bring \$12 to \$20 a Thousand

There is a special Helm Process for using crushed granite, marble, felspar, mica, or mica-spar crystals, whereby all the natural beauty and color of these aggregates are revealed on the face of the brick. This is a striking distinctive product with a great future. To face 1,000 brick in this manner will cost from \$2 to \$3, but the product actually sells for \$12 to \$20 a thousand, thereby yielding an enormous profit to the manufacturer. The process is so simple any novice can handle it successfully, and full instructions are furnished to the purchaser of Helm equipment.



How to Manufacture Pressed Cement Brick and Blocks

Manufacturing is a man's job—it appeals to the red-blooded fellow of energy and ambition and action. It is worth while. Manufacturers are money makers and men of prestige. They wield influence as successful men. They take raw material and convert into serviceable form and amass money in doing it. Some do it with wood, some with iron and steel, and now you will do it with merely sand and cement.

A Simple Process

Making pressed brick and blocks is a simple process. A Helm Press is all you need to start this industry. With a little determination and the most moderate business ability you are sure to score a gratifying success and dominate the trade of your community.

The minute you get the Helm Press and some sand and cement you are ready to roll out pressed brick and blocks which will attract favorable attention and comment on every hand.

In a few words, this is the entire process: One part of Portland cement is mixed with four or five parts of sand for brick or sand and gravel combined for blocks. Mix until a uniform color, add 10 to 15% water and mix again until uniformly distributed. This mixture is put through a Helm Press, converting it into beautiful brick and blocks, then you cure them ready for use by watering them daily for a week. After this they dry out, well cured and hard in 10 days to 2 weeks from the time they were made. This is the complete process from beginning to end. No other manufacturing business is so simple or so easily acquired.

Selection of Materials

Sand, gravel, cement and water are the materials required for brick and block making, the same as for any other form of concrete. The clay brick manufacturer invariably locates his plant at the clay supply. That is a good plan for the cement brick and block maker. Three-fourths the cost of sand and gravel is in hauling. This is turned to profit by locating at the supply when possible.

Sand. There are three general classes of sand. First, bank sand, which is found on high and low grounds at various depths; second, washed or bar sand found in river beds and lake shores and sometimes in banks along streams and waterways; third, crushed sand which is obtained by crushing stone.

For brick making sand should pass through a one-eighth inch screen. It should be clean, fairly sharp and consist of grains of various sizes.

Here are two ways of telling whether sand is clean or not:

1st—Rub some between the hands and if they are badly discolored do not use it.

2d—Drop a handful into a pail of clean water. If the water is clear enough to see the sand at the bottom in two minutes it is "clean."

Gravel or crushed stone from $\frac{1}{4}$ inch up to $\frac{1}{2}$ inch, even a small percentage up to $\frac{3}{4}$ inch can be used in connection with the sand when making blocks. For best results in block making, at least one-third of the material by weight should be coarser than one-eighth inch.

Clay in sand and gravel up to even 12 per cent. has been found not to be detrimental, and some engineers even say a little clay is beneficial.

Portland Cement. The following is a simple definition in plain English for Portland cement: Portland cement is made from a mixture of materials containing lime, silica and alumina in proper proportions. The materials are crushed and ground together to a powder so fine the grains cannot be felt, and then conveyed into kilns, and there burned at a temperature of more than 2,000 degrees Fahrenheit, which produces cement clinker. The cement clinker is then cooled and ground again to an impalpable powder and transferred to storage tanks for seasoning before marketing.

The best Portland cement obtainable should be used for all concrete products.

Slow setting cements which get their set from 4 to 9 hours are stronger than those which set more quickly.

Water. This is seemingly a trivial item, but it is important. Water should be clean and free from acid or strong alkalis.

Proportioning the Materials

Given the proper materials to work with, the next feature is to combine them in the proper proportions to get best results. Strength and impermeability must be secured.

The proportions must also depend largely on the requirements that the brick and block must meet as structural material. You will have the same latitude in this that is granted other materials. For instance, clay brick of different grades vary greatly in strength and other qualities, yet each grade has a legitimate use. The same is true of natural stone and lumber. So keep this thought before you as you make and sell these products.

The proportion of cement to the aggregate will depend very much on the quality of the aggregate. A brick or block made one part cement to six parts aggregate might be better than one to four of another aggregate.

A practical method of proportioning is to use a sack of cement as the unit for cement measurement and use a bottomless box holding as many times the volume of the sack of cement as the proportion indicates. For instance, a sack of cement contains one cubic foot, therefore if the proportions are to be 4 to 1, use a bottomless box which will hold four cubic feet of aggregate.

Proportioning of water—First of all it should be remembered that the strength and density of the concrete will depend on the percentage of water used in the mixture. Exhaustive tests and experiments show that the medium wet mixture gives the best results and the Helm Press handles this mixture to the best advantage.

Where the dry mixture calls for 6 to 8 per cent. of moisture the medium wet mixture calls for 10 per cent. where sand is moist, to 15 per cent. where sand is dry.

There should be enough water uniformly distributed in the mass so that when a handful of the mixture is taken up and squeezed slightly it will remain in shape when the hand is opened, but should not contain enough moisture so it can be squeezed out of the mixture. Another good method is to stroke the concrete with the back of the shovel. The proper mixture will cause quaking, in other words, causing the moisture to draw to the surface, showing the moisture where the concrete is struck with the shovel.

In hand mixing the water can be best distributed by using a sprinkling can. There should be a means of measuring the water as definitely as the other materials are measured, as this will save time and secure greater uniformity. The measurement can be varied according to the condition of the aggregate.

What Tests Reveal

In experiments on dry, medium and wet mixtures, it was found that the medium mixture was the most dense, the wet next and the dry least. The engineer making these experiments concluded that the medium mixture is the most desirable. He found it to be 1 per cent. denser than wet and 9 per cent. denser than dry concrete.

Six-inch concrete cubes were made in the laboratory and tested at 30 days for crushing strength with the following results:

Dry mixture crushed at 63,000 pounds.

Medium wet mixture crushed at 82,000 pounds.

Very wet mixture crushed at 80,300 pounds.

This test shows the medium wet mixture averaging 25 per cent. stronger than the dry mixture, and comparing this test for tamped concrete under the very best conditions, which naturally obtain in a laboratory, with the tests made on Helm brick consisting of 1:2:4 mixture shows that the pressed product is 20 per cent. stronger than this test sample made by tamping.

In ordinary practice where the Helm press is used the proportion may vary from 6 to 1 down to 4 to 1, and there may be some special cases where a richer mixture might be desirable. This depends on the load the product must carry, how sharp the materials are, how fine or coarse and how the particles vary in size. The latter is due to the fact that stronger concrete is made with the same proportions where the particles of the aggregate vary in size instead of being uniform in size.

Mixing

There are two ways of mixing—shovel mixing and mechanical mixing. Shovel mixing should be done on a flat, water-tight platform, or other non-absorbing surface. The right proportion of sand or aggregate is first measured out. Spread it very evenly on the board, place the cement on top, then mix the two until the mass assumes a uniform color. By striking the back of the shovel across the material, the uniformity of color can best be determined.

The right percentage of water is then added, spraying it on as evenly as possible. The more evenly the water is added the less mixing will be required to secure uniform distribution.

A mixer can be added to the plant at any time. It will cut the labor cost of mixing from 50 per cent. to 75 per cent.

Curing the Product

After the product is formed and removed from the machine then attention must be given to curing it. All freshly formed concrete products should be placed in a curing room or shed to protect it from the sun.

When curing by the air drying system the product is thoroughly wet down once or twice a day for a week, and then allowed to finish curing without additional wetting. No water is applied until after the initial set takes place. The initial set will take place between two hours and four to six hours. It is good practice to watch for the edges of the product to turn light as this indicates that very light sprinkling is required. After the first day the product can be wet down thoroughly.

By having pallets for a two days' run the product can remain on the pallets for 48 hours, then it can be removed and placed in piles in the yard, where it can still be sprinkled once a day for the balance of the week. If there is plenty of curing room, the product can be removed from the pallet and cured right there. It should then finish curing and drying before being sold. The greener it is when sold, the more carefully it will have to be handled. It should stand for two weeks to 28 days from the date of manufacture before being used, but the older it gets, the better it will be.

Steam Curing

This process both simplifies and economizes. Though it is now quite generally understood, perhaps we had better explain at this point that curing refers to the chemical change which takes place and converts the materials, which were so soft and plastic when being formed, into stone. This chemical action is known as crystallization and the conditions for perfect crystallization are moisture and heat. Steam curing intensifies these conditions and keeps them uniform, hence uniformity of color is heightened and the time of curing is hastened.

On page 19 is illustrated a series of curing rooms. These are cheaply constructed. The system of piping is also fully illustrated. The cost of a suitable boiler and required piping for the average plant will run from \$225 down as low as \$50. For instance, product can be steamed in a limited way by using an old kitchen boiler supported on concrete blocks under which a fire can be built. A portion of the plant can be curtained off with heavy canvass and confine the steam sufficiently, but draughts must be guarded against. We recommend, however, using a regular boiler.

It is unnecessary to make the curing room very tight. In some plants instead of regular doors, canvas curtains are used. Not over five to ten pounds of steam need be carried and the temperature in the curing room is kept at about 100 degrees. The temperature can run a little higher with good results.

The product should be steamed for 24 to 48 hours. In small plants it is not economical to hire a man to watch the boiler at night and under such conditions the product can be steamed during the day run for two days. This cures it ready for removal on the morning of the third day, so the most practical way is to have sufficient curing room for 2½ to 3 days' run.

Cement brick and blocks when cured by this method will be as hard in 48 hours as air cured product is in 7 to 15 days. The product can be taken directly from the kilns to the job, but it is better if allowed to stand in the yard for a few days. In some plants before the steam is turned on for the day the output is wet down thoroughly.

Concrete products when air dried reach not over 51 per cent. of their full strength inside of a week, and 65 per cent. at the end of a month. From then they harden steadily, reaching 73 per cent. in two months, 85 per cent. in three months, 92 per cent. in four months, 94 per cent. in five months and 96 per cent. in six months.

It has been found that concrete products developed the average seven-day test for air dry in 36 hours by steaming, and in five days by keeping them moist the 28-day test was developed. In other tests it has developed that the time necessary for complete curing is reduced from 21 days to three or four days by steaming.

Steam curing is an advantage in winter work. The product can be placed outdoors when removed from the kiln, while for air drying it should remain inside for a week to ten days. Steam curing also gives a lighter color to cement products.

Buildings and Plant Arrangement



No manufacturing business requires so small an investment in machinery, as little working capital or as little investment in buildings as the concrete business. The accompanying illustrations show how little is actually required in the way of buildings even when large daily output is secured. Many a man has established himself in this business by simply putting up a cheap shed right in his back yard.

The upper and lower illustrations show plants established in this manner which were equipped with the Helm Model 5 press. These plants established in the simple manner indicated can produce as high as 10,000 brick or a thousand blocks daily. This all goes to show that this business can be started with but very little capital in addition to that required to purchase the machine.

The view at the right shows another plant established in the same manner. This plant is equipped with a Model 8 Helm press and in this plant as high as 5,000 brick or 500 blocks a day can be produced. In this plant the materials are mixed by hand in the box shown in the foreground.



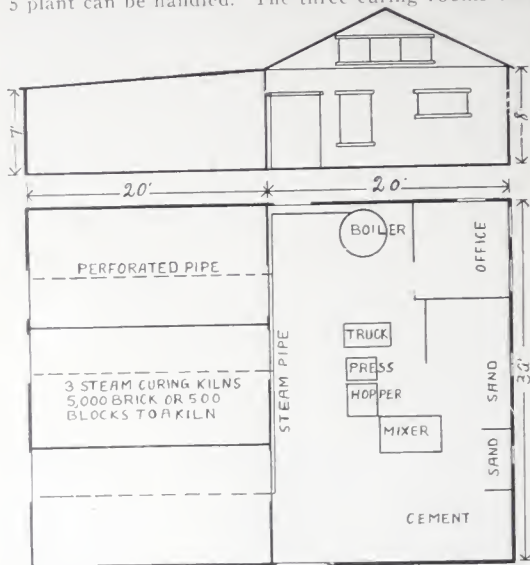
These are typical back yard plants which have enabled their owners to get out of the wage class and build up a profitable business. They started with but little capital.

A shed roof to cover the machine and freshly formed product is all that is actually required. The product can be made in a shed 20x30 feet and the curing of 5,000 brick or 500 blocks daily can be handled in a shed 20x24 feet. This suggestion is made with the idea of later enclosing the sheds, perhaps veneering them with the products of the plant, to make a permanent plant which can be heated and operated the year round.



Enclosed Plant for Steam Curing

This is a good arrangement for a Model 8 or a Model 5 plant to turn out 6,000 brick or 500 blocks daily. With twice the curing capacity the full capacity of a Model 5 plant can be handled. The three curing rooms each have a capacity of 5,000 brick or 500 blocks. The operating room is 30x20 feet and the three kilns take the same space.



For hand mixing a platform about 8 ft. square should be placed at the point indicated for the mixer. A floor in the building is not absolutely required but a cement floor would be quite a convenience in the operating room.

The operating room can be constructed with 2x4 frame and sheathed. Later it can be veneered with the brick and blocks and this will advertise the product.

The curing room should not be over 7 ft. high. It may be roofed with tar paper roofing or cement. The walls and partitions can be of very cheap construction. They may be built up of concrete on metal lath or with tar paper roofing nailed on light wooden uprights.

An Economical Racking System

To place 5,000 brick or 500 blocks in one curing kiln a series of portable racks as illustrated should be used. They are constructed of $\frac{3}{8}$ x3 inch slats 8 ft. long with 2x6 pieces used for the crosspieces. Each rack holds ten pallets of five brick each, making 50 brick to the rack. They are laid up six or seven courses high when used on cars or ten courses high when racked on the ground. One rack requires $5\frac{1}{3}$ square feet of material for slats and $2\frac{1}{3}$ square feet for supports, practically 9 feet of material to the rack. They can be made right in the plant.

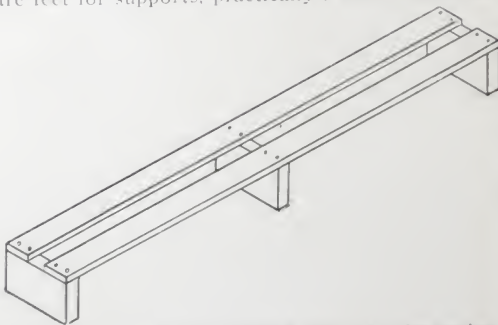
The cheapest way to handle the product from press to curing racks and from there to the yard is with spring trucks or the car and track system. Rails weighing 20 pounds will carry the cars. New or second hand rails can be used. A car will hold 1,000 brick or 80 to 100 blocks by using 17 racks to the car.

To secure minimum cost of handling there should be sufficient pallets, cars, and racks for two days' run. If this cannot be afforded, the next cheaper way is to use just two cars, convey the product to the curing room and there set the filled racks off.

With the complete car, track and rack system in use in connection with steam curing the product is placed from the machine directly on the cars. They stand in the curing room 36 to 48 hours, then they are run to the yard and the product yarded right from the pallet.

How To Construct Cars

By purchasing the axles and wheels an inexpensive car can be constructed in the plant. A 16-foot length of 3x8 material will make the two bed pieces in which the square axle will be inserted at the bottom with 2x4 pieces inserted crosswise at the top



to securely tie the bed pieces. Slats are then placed lengthwise of the bed to receive the first course of brick or blocks. Then the racks are built up until the car holds about 1,000 brick or about 80 blocks. Complete sets of axles and wheels will be furnished at \$7.00 for a car. It takes 32 ft. of material for the two bed pieces, 6 ft. for cross pieces, and 17 ft. to form the slats, making 55 square feet of lumber to a car. These cars can be built in the plant.

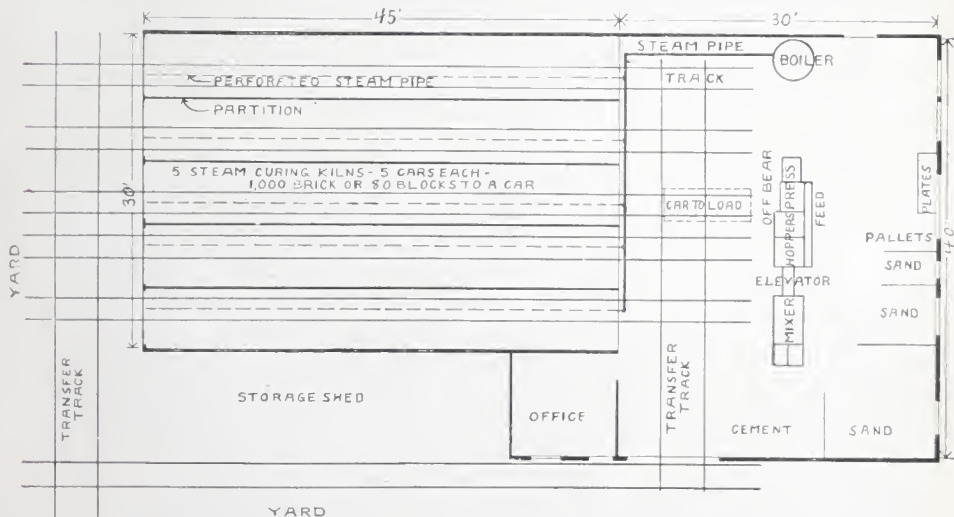
An Ideal Plant For Making Helm Pressed Brick and Blocks

Every man now in the concrete business or who will go into this great coming business has an ideal plant in mind. This is the ideal plant we suggest as your goal. You may start in the most limited way, even with just a shed roof over your machine, but eventually you will own a plant like this. The business will make it for you.

An operating room 40x30 feet and a curing shed 30x45 feet comprise the buildings. These buildings will take care of the Model 5 Helm pressed brick and block plant. Such a plant has a capacity of 10,000 brick or 1,000 blocks daily. By increasing the curing shed one-half and using the Model 5 power plant this capacity is increased 50%.

The raw material enters one end of the plant and the cured product leaves the other end in 48 hours.

One man handles the mixer and furnishes all the concrete needed to supply the plant. A bucket or cheap belt elevator can be constructed to take the mixture as discharged from the mixer and elevate it into the feed hopper (see view on page 20.) The second man feeds the boxes at the hopper, the third man operates the press and the fourth man offbears the product from the back table of the press to the car. This



crew of men will produce 10,000 to 15,000 brick daily or 1,000 to 1,500 blocks daily with the help of two or three additional men to care for the product and yard it.

The curing shed is divided into five compartments, each holding 5,000 brick or 500 blocks placed on five cars. Each compartment measures 6x45 feet.

The steam pipes leading into the curing rooms should be placed in the floor and perforated about 18 inches apart with 1-8 inch holes, so as to get good distribution of the steam in the curing room. The pipes may be placed between the tracks which can be laid right on the ground on light ties.

This plant is designed for the use of the complete car system. When working at the rate of 10,000 brick a day 5 cars holding 1,000 brick each will be filled in the forenoon. These cars are run into the curing room as filled. The 5 cars will fill the room, when it can be closed ready for steaming while the next room is being filled during the afternoon. The second day two more rooms are filled and on the forenoon of the third day the fifth room is filled while the first and second are being emptied. The same system is followed in making blocks.

The design calls for two transfer cars and transfer track, but with the curing room so compactly arranged this equipment can be dispensed with providing the cured product can be yarded at the end of the curing rooms. This will mean quite a little saving in expense. Open bins should be used for the sand and gravel of different grades.

At the opening of the curing room there should be light doors hinged so they will swing out of the way or canvas curtains on rollers can be used.

The building is very cheaply constructed of 2x4 frame work and sheathed. Later it can be veneered with the product of the plant. Such a plant can be operated the year round by having steam heat and steam curing. The steam for curing will first heat the operating room, then it passes out of the perforated pipes in the curing room and surrounds the brick and blocks as a warm damp fog.



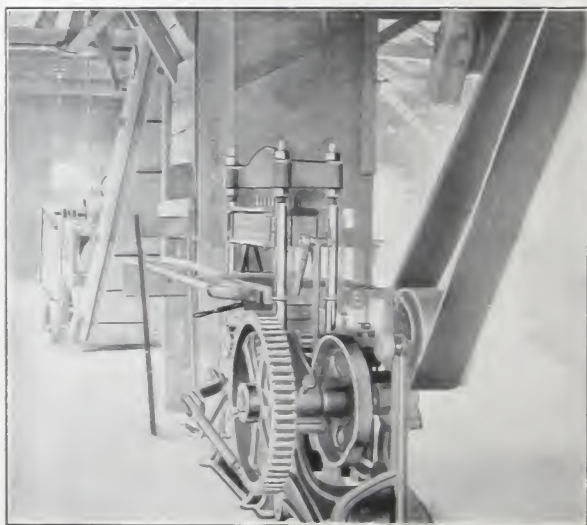
The view above shows a plant in which this layout is used

This is the ideal layout for your ideal plant. It is a plant that can be economically handled by any number of men and for an output of 5,000 to 15,000 brick or 500 to 1,500 blocks a day. It is a plant which will take care of big contracts quickly.

An Interior View

This view shows the interior of the above plant, equipped with a Model 5 Helm power press. At one end of the press is the charging hopper, beyond this a belt elevator which lifts the material from the mixer to the hopper. With this arrangement one man handles the mixer, a second fills the conveyor boxes, the third operates the press, and the fourth does the offbearing from the press to the car, producing from 1,000 to 1,500 per hour.

You may start in just an open shed in your back yard as shown on page 17 but your business will grow and eventually you will be the proud and prosperous owner of an ideal plant like this.



For the man even with very little capital this is a real business opportunity. Some men have actually started who personally had no capital. They interested friends who put in a little money. Others started in by taking contract with the purchaser advancing the cost of the machine, to be deducted from the final settlement on the contract. It is a business with great possibilities for the man of limited means. With the complete directions which are furnished no man need hesitate to start through lack of experience. Many of the most successful operators started in this way.

Helm Brick and Block Presses

Here is the final step. There are three essentials. 1st, the practical building system. 2d, a suitable product. 3d, the machine. Thus you see that Helm Presses are built for a special purpose and that they represent practical principles in building construction and successful manufacturing. You should consider all of these features carefully as you read the following pages of this book.

Durability

Helm Presses are not an experiment—They have stood the test for years.

Testing new machinery is mighty expensive business. You cannot afford to do it, so do not buy an experiment.

The Helm Press was operated one entire season before a single machine was offered for sale. That is one of the secrets of its instant success and thoroughly established reputation.

Helm Presses are built along practical mechanical lines, scientifically and correctly designed, constructed from the best grades of iron and steel, each part carefully selected and machined. For instance, before machining, 1800 pounds of iron and steel enter into the construction of our Model 5 hand power press. This enormous weight and solid construction is required to stand the wear and tear of continued hard usage, year in and year out, which this machine is designed for.

It is not intended that you should buy a new machine every season nor even a new machine every decade. The life of a Helm Press is unlimited.

Each and every part is built from an iron templet so all parts are interchangeable on every machine. Only the most highly skilled labor is used in constructing these machines. Every machine is thoroughly tested before leaving the factory.

40 Tons Pressure

By a remarkable combination of power and action the enormous pressure of 80,000 pounds—think of it, 40 tons—pressure is developed on a Helm Press.

It is this terrific pressure that makes Helm block and brick the finest looking and most permanent. This irresistible crushing power on medium wet concrete welds all the elements into brick and blocks that will resist the elements and last for ages.

This uniform pressure drives the particles of cement and aggregate into a solid, uniform mass, filling out every edge and corner clean, sharp and strong.

Welding concrete into these fire proof, moisture proof, frost proof building materials is just like welding iron. Pressure and water weld these products just as pressure and heat weld iron. The lack of either essential is just as disastrous in concrete as in welding iron.

By our pressure system one downward sweep of the pressure lever with 200 lbs. exerted at its extreme end and means 80,000 lbs. pressure uniformly applied in the pressing of ten bricks.

Speed

We are moving at a rapid pace today. In every business, methods must be right up to the minute. To succeed, every advantage must be taken to turn the time and labor into the greatest possible profit.

Volume of business is the secret of success in big commercial institutions. This applies to your concrete factory, too. You can make a bigger profit on 50,000 brick if you can make them in five days than if it required 30 to 60 days.

Ability to deliver the goods means something. If a purchaser wants 60,000 brick in a single contract, will you land it if you ask 20 to 60 days to produce the brick and a competitor displays Helm Press products and will produce the output in six days?

It is unnecessary to tie up large sums in stock in the yards for weeks and months when you have a Helm Press to produce your stuff when you want it, as fast as you want it and just as your customers require it.

The Helm machines are put out in various sizes and designs so as to meet every requirement. Look over the following pages, select your machine and get into this profitable industry. Full instructions are furnished with each machine so the man without any experience with concrete or machinery can take one of these outfits and work it successfully.

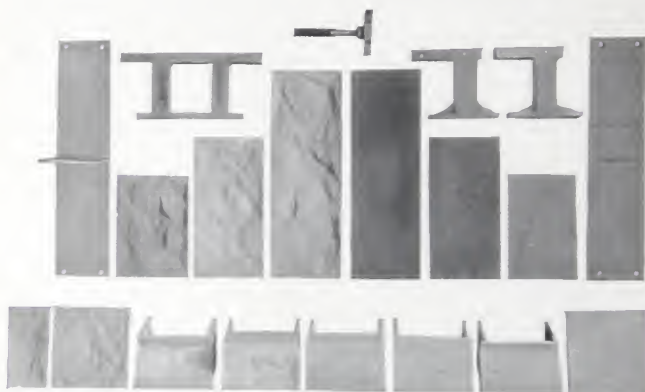
The Helm Brick and

CAPACITY, 10,000 Brick or Blocks

EQUIPMENT: Model 5 Helm Press as illustrated, 10 plain brick dies, 10 ornamental block equipment as illustrated below for making all the blocks shown on pages 10 and 11.

This Machine Provides the Greatest Building Must be Used Daily in Every Part of

The Block Equipment



This equipment will make any of the DRY WALL two-piece blocks and veneer blocks illustrated in this book. Boxed for shipment it weighs 500 lbs.

Price of the complete equipment when purchased separately to be used with the Model 5, 10-brick press, \$80.00.

- 1 16" plain plunger No. 30
- 1 16" rock plunger No. 31
- 1 16" standard No. 32
- 1 5" rock end No. 33
- 1 5" rock mitre end No. 34
- 1 5" plain mitre end No. 35
- 1 5" plain angle end No. 36
- 1 5" plain end No. 37
- 1 4" plain plunger No. 38
- 1 4" rock plunger No. 39

- 1 8" plain plunger No. 40
- 1 8" rock plunger No. 41
- 1 spring block No. 42
- 1 24" rock plunger No. 43
- 1 24" plain plunger No. 44
- 1 12" rock plunger No. 45
- 1 12" plain plunger No. 46
- 1 pair plunger stems No. 47
- 2 cell box sides with two grooves
- 1 dividing blade

The Model 5 Combination Power Press

This consists of the same equipment which makes up the Model 5 combination brick and block hand power outfit listed above, equipped with the power attachment illustrated on page 28, which increases the capacity of the machine 50%.

Shipping weight 3,300 pounds. Price **\$575.00**

Brick Pallets, pine, special construction, hold 5 bricks each 7c

Block Pallets, pine, each 12½c



The Ten Ornamental Brick Dies. At the Right One of the Ten Plain Dies

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Block Plant Model 5

Daily, F. O. B. Factory Price \$395.⁰⁰

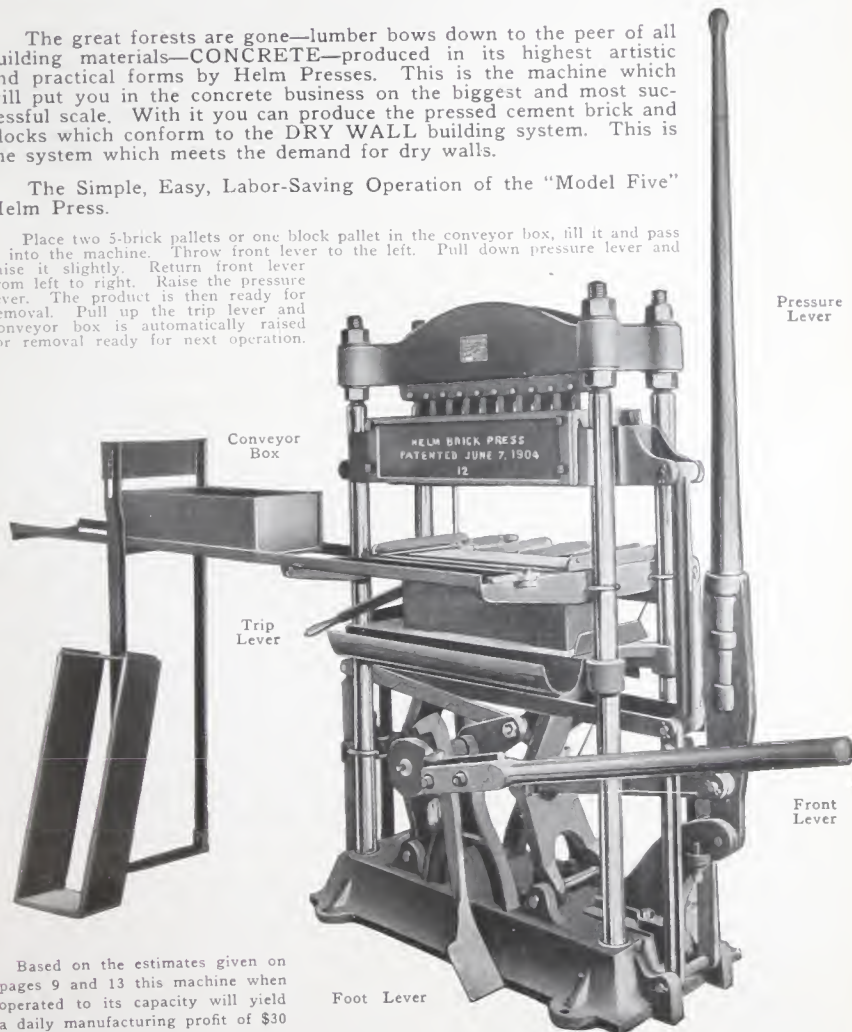
designs, 15 sample wood pallets, sample block pallet, 3 conveyor boxes and track complete
Shipping weight 2250 pounds.

Material of the Age, Materials that Absolutely America.

The great forests are gone—lumber bows down to the peer of all building materials—CONCRETE—produced in its highest artistic and practical forms by Helm Presses. This is the machine which will put you in the concrete business on the biggest and most successful scale. With it you can produce the pressed cement brick and blocks which conform to the DRY WALL building system. This is the system which meets the demand for dry walls.

The Simple, Easy, Labor-Saving Operation of the "Model Five" Helm Press.

Place two 5-brick pallets or one block pallet in the conveyor box, fill it and pass it into the machine. Throw front lever to the left. Pull down pressure lever and raise it slightly. Return front lever from left to right. Raise the pressure lever. The product is then ready for removal. Pull up the trip lever and conveyor box is automatically raised for removal ready for next operation.

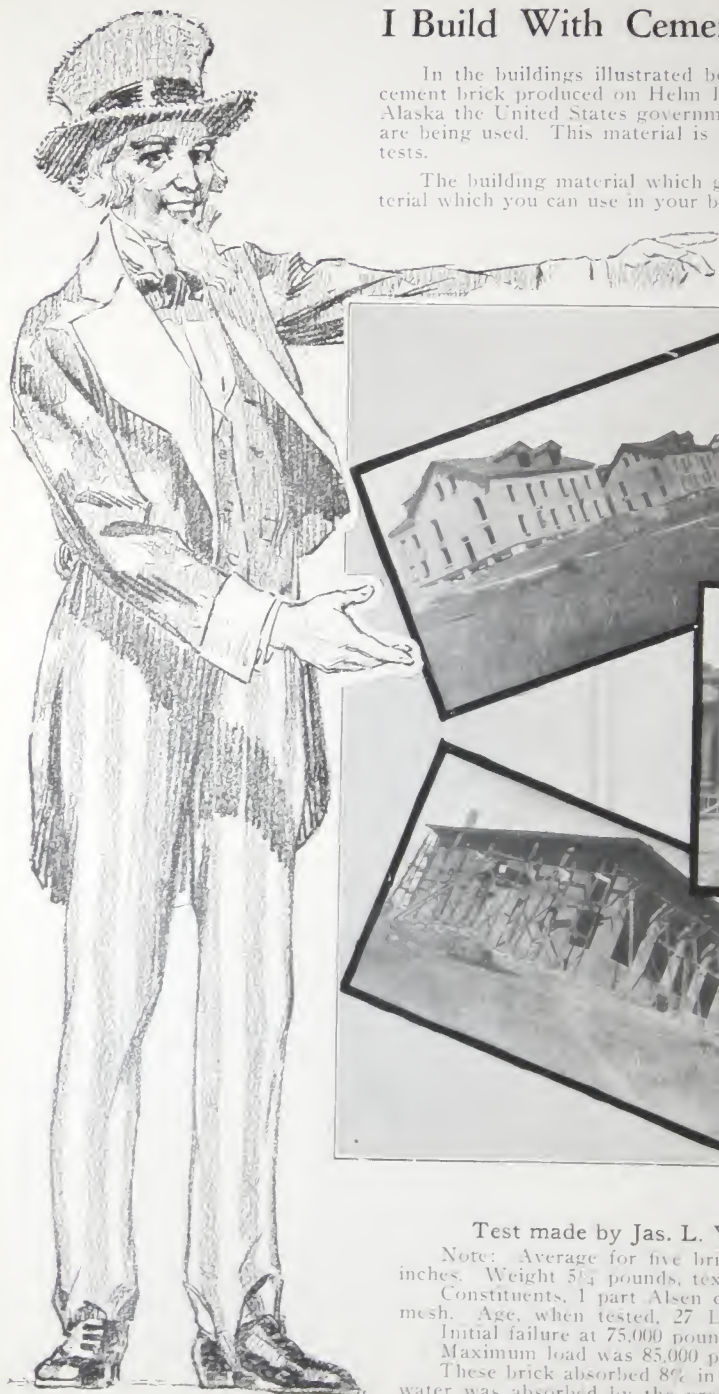


Based on the estimates given on pages 9 and 13 this machine when operated to its capacity will yield a daily manufacturing profit of \$30 to \$50.

I Build With Cement Brick and Blocks Made

In the buildings illustrated below the United States cement brick produced on Helm Presses. This is a group Alaska the United States government is erecting a lighth are being used. This material is specified for use in gov tests.

The building material which gives satisfaction to the terial which you can use in your buildings. It has stood



Test made by Jas. L. Young, Consulting Engineer for U. S. G.

Note: Average for five brick. (Taken from spec.)
 inches. Weight $5\frac{1}{4}$ pounds, texture, coarse grained.
 Constituents, 1 part Alsen cement, 2 parts sand,
 mesh. Age, when tested, 27 DAYS. (Note—Properly
 Initial failure at 75,000 pounds, equal to 2,419 pounds
 Maximum load was 85,000 pounds, equal to 2,742 pounds
 These brick absorbed 8% in 48 hours while a red lay
 water was absorbed by the pressed clay brick.
 It would require a building with 253 12-foot stories
 under their own weight.

rick and Blocks Made on Helm Presses

government has used over three million pressed buildings erected at Fort Bayard, N. M. In which Helm pressed cement brick and blocks buildings after being placed under rigid

isolation and the United States government is the best building material for use in the most under every condition and in all climates.



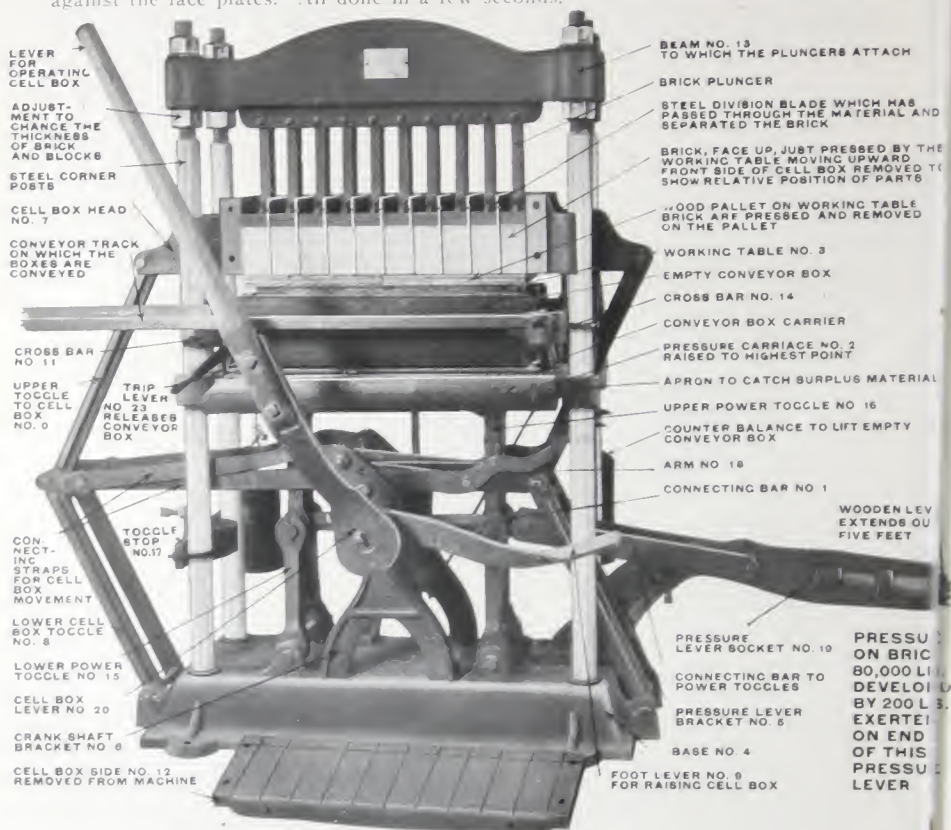
Consulting Engineer for U. S. Government at Honolulu

Actual dimensions, 37 $\frac{1}{2}$ x8x2 $\frac{1}{4}$, flat area, 31 square feet. The 100 lbs. of rock sand which passed a screen of $\frac{1}{4}$ -inch mesh is only 1 to 61 lbs. per square inch. The 100 lbs. of 24-in. face brick took 12%, in other words 50% more weight than the 100 lbs. of rock sand. The brick is not secure enough weight to cause these brick to crush.



The Helm Face Up Pressure Principle 80000 POUNDS PRESSURE

In the illustration below one side of the cell box has been removed to show the patented basic working principles of the Helm Press. A downward sweep of the pressure lever aided by the fulcrum and toggle joints compresses the ten brick against the face plates. All done in a few seconds.



Dimensions—Size of base, 17x44. Height of machine 60 inches. Extreme length from end of track to end of pressure lever when down, 13 feet.

Size of brick, $2\frac{1}{4} \times 3\frac{3}{4} \times 8$ inches.

The Helm Press makes ten perfect, uniform pressed cement brick or one block at one complete operation. It is easily operated from two to three times a minute.

It is successfully and economically operated by any number of men from one to ten. Using a mechanical mixer saves 25% of the labor cost for brick or blocks.

It applies uniform pressure with sufficient power to secure uniform density.

It presses brick and blocks face up so they are easily faced with finer material when desired. Its face plates are in contact with the product for the least possible time. It does not exceed ten to fifteen seconds. This makes it possible to use very wet material for common brick and blocks and coarse, wet body with dry facing for face brick and blocks without sticking to the face plates.

It makes brick and blocks without a troweled, stroked or tamped surface. It makes any veneer or two-piece block required in a building.

It uses true concrete under heavy, uniform pressure in making brick and blocks.

It reduces the labor cost and saves cement by pressing the medium wet mixture into a solid mass having the least porosity.

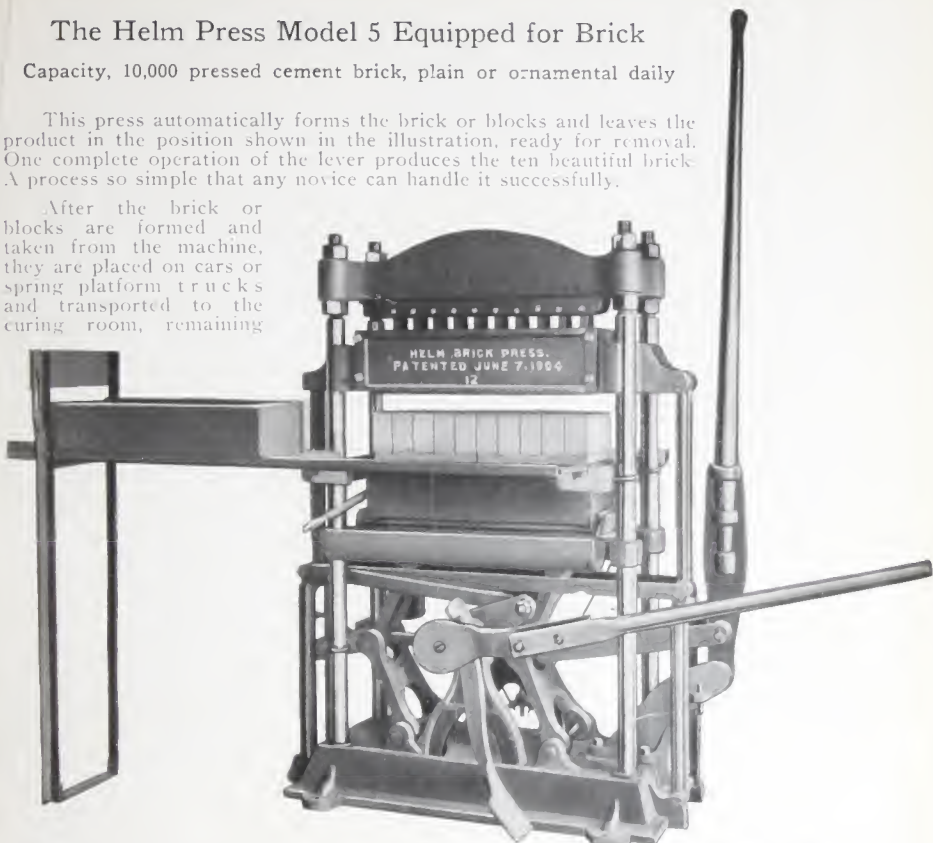
It makes brick and blocks that have dense, hard, beautiful faces, clean sharp corners and edges, perfectly true and uniform.

The Helm Press Model 5 Equipped for Brick

Capacity, 10,000 pressed cement brick, plain or ornamental daily

This press automatically forms the brick or blocks and leaves the product in the position shown in the illustration, ready for removal. One complete operation of the lever produces the ten beautiful brick. A process so simple that any novice can handle it successfully.

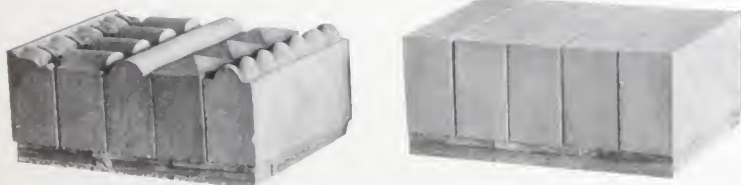
After the brick or blocks are formed and taken from the machine, they are placed on cars or spring platform trucks and transported to the curing room, remaining



on pallets about 48 hours when they can be removed and piled. By wetting the product once a day for a week it hardens without burning and is ready for the market within 10 to 28 days from the time it is made.

Blocks are made in substantially the same manner the brick are formed. There is no lost labor in opening and setting up a mould box for each block as required in other machines. This press is automatic and requires the least amount of manual labor

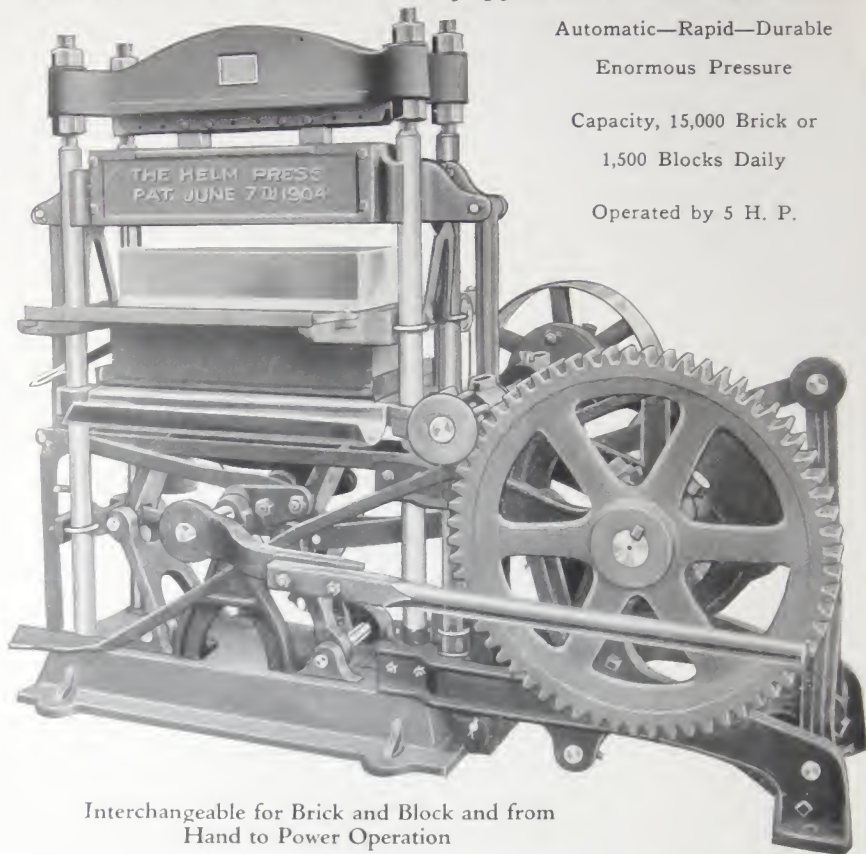
The Ten Brick, Plain or Ornamental, as They Come From the Machine



Equipment—This press as illustrated above including the conveyor track, 3 conveyor boxes, 10 plain brick dies, 10 ornamental dies, and 50 sample wood pallets for brick making only, shipping weight 1,750 pounds. **\$315.00**
price f. o. b. factory

Same equipment with power attachment as illustrated on page 28 shipping weight 2,800 pounds, price f. o. b. factory..... **\$495.00**

The Helm Press Model 5 as Equipped for Power Operation



Automatic—Rapid—Durable

Enormous Pressure

Capacity, 15,000 Brick or
1,500 Blocks Daily

Operated by 5 H. P.

Interchangeable for Brick and Block and from
Hand to Power Operation

This is an exclusive Helm feature, making it possible to install the best equipment in the plant right at the start, and increase the output from time to time by adding attachments.

The Power Attachment

It is illustrated in connection with a Helm Press fitted for making plain blocks with a block formed ready for removal. This attachment can be added to any Model 5 Press at any time. It is back geared 6 to 1. The power pulley is 16 inches in diameter with 8-inch face. Size of base 29 inches long by 21 inches wide. Width over all, 36 inches; height 36 inches; weight 700 pounds. It is built for heavy service and so constructed it can be attached to any Model 5 Helm Press now in use.

Capacity—The speed of the machine is limited only by the ability of the operators to get the material to and away from it. Three operations a minute are completed with ease. The daily output is easily 15,000 brick or 1,500 blocks, operated by 5 horse power.

Method of Operation—A conveyor box is filled and passed into machine. Front lever is swung to the left. Touch the trip lever with the foot and the power acts instantly, completing the operation and leaving the machine in position illustrated above, ready for removal of product. Instantaneous and automatic in operation and stops automatically.

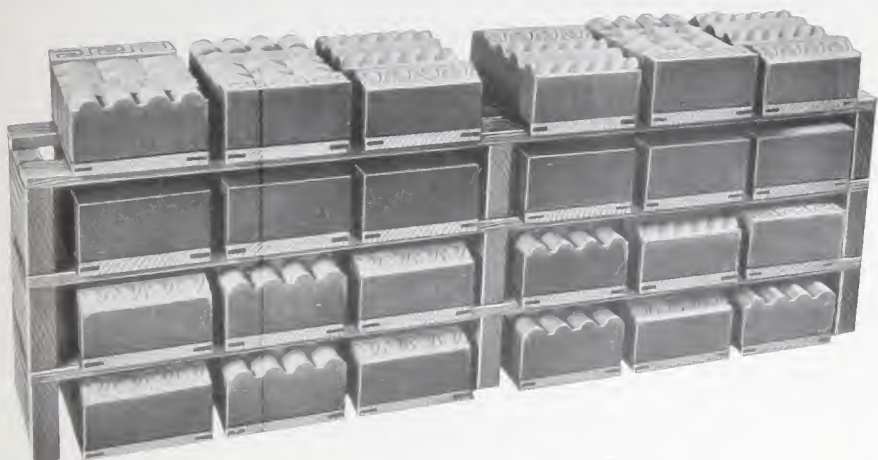
It is always economy to let machinery take the place of hand labor. In the concrete plant it means lower manufacturing cost, better equipment and better product. These results are obtained by using the Helm Press equipped with the power attachment.

Up to date plants are usually equipped with a mixer operated by power and consequently the only additional cost will be the adding of this attachment to the press. Price of power attachment when furnished separate from
press

\$180.00

Pressed Ornamental Brick Which Sell for as High as \$30.00 a Thousand

This is an actual photograph of pressed ornamental brick just as they came from the Helm Press. Made just as quickly and handled as easily as the plain brick.



This view shows how easily the brick and blocks can be racked in a small space for curing by using a series of movable racks. As many as ten courses can be piled in this manner, thus racking 300 brick in a space six feet square.

These racks are usually made 8 feet long and hold 10 pallets of five brick each. Where the car system is used these racks are placed directly on the car. Three separate tiers are built up. As many as 1,000 brick can be handled on a car in this manner. This is a very economical system but it is not absolutely required. Conveniences of this nature can be added to the plant at any time. Every purchaser of a machine is furnished with instructions concerning plant equipment and method of operation.

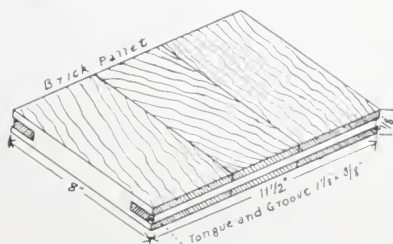
Capacity and Plant Arrangement

To man the Model 5 Helm Press for its ultimate capacity when operated by hand three men will be required. One man fills the conveyor boxes, one man operates the press and the third man acts as the off bearer. These three men supplied with the mixed material and the necessary help for yarding the finished product will turn out 10,000 pressed brick or 1,000 blocks in a day.

We recommend using a mixer. One man with a mixer will furnish the material ready for the box filling. On the average two men will take care of the yarding of 10,000 brick or 1,000 blocks daily. To complete the crew one additional man can be used to good advantage for special work.

This gives a crew of seven men with a mixer. If a mixer is not used figure on one man to each thousand of brick daily capacity. When operated with smaller crews the daily output will be in proportion to the number of men working.

This machine was designed with the view of getting the material to it and the product away from it in the quickest and easiest possible manner. It is a continuous operation. The machine is pressing brick or blocks, the material is coming to it in the conveyor boxes, and the product is being removed from the back table all at the same time. This gives the greatest speed in operation. The view at the right shows the special form of 5-brick pallet made up of three pieces of pine grooved and tongued at each end. The brick rest on this pallet lengthwise with the grain and we absolutely guarantee no broken brick with this construction. The brick and blocks are pressed right on the pallet and are removed from the machine face up without turning them over.



The Helm Brick and Block Press

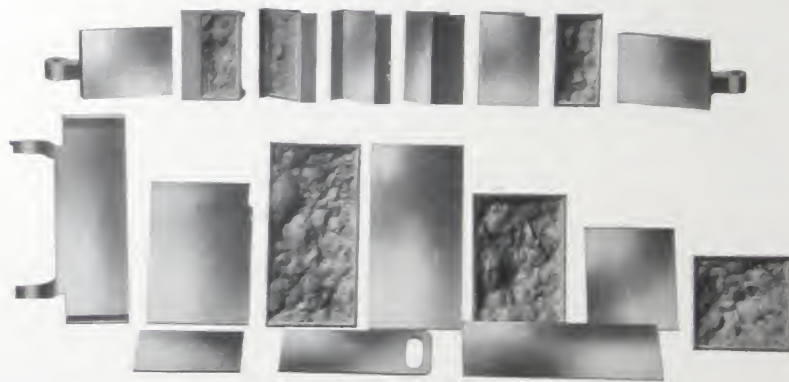
Capacity, 5,000 Brick or 500 Blocks Daily

EQUIPMENT: Model 8 Press as illustrated, 5 plain brick dies, 5 rock face dies, plain end gate, rock face end gate, hopper, 25 sample brick pallets, 1 sample block pallet, and block equipment as illustrated below for making the blocks on pages 10 and 11, excepting 24" length.

The illustration below shows all the necessary parts required with the Model 8 Press for making the various plain and rock face blocks and angle blocks up to and including the 16-inch lengths. The parts are as follows:

The Block Equipment

1 Left End Gate	No. 71	1 4" Plain Face Plate	No. 79
1 Right End Gate	No. 72	1 Blade	No. 81
1 Front Gate	No. 73	1 Back Plate	No. 82
1 Rock End	No. 74	1 12" Plain Face Plate	No. 86
1 Rock Mitre End	No. 75	1 16" Rock Face Plate	No. 96
1 Plain Mitre End	No. 76	1 16" Plain Face Plate	No. 84
1 Plain Angle End	No. 77	1 12" Rock Face Plate	No. 95
1 Plain End	No. 78	1 8" Plain Face Plate	No. 88
1 4" Rock Face Plate	No. 93	1 8" Rock Face Plate	No. 94



Hollow Block Attachment

For making ordinary hollow blocks with two core openings. These blocks lay an 8-inch course in the wall and are 4x16 inches on the face. They are made plain or rock face with plain or rock end. From 300 to 500 can be made daily.

Complete attachment to fit either Model 8 Brick Press or Model 8 Block Press.

price \$25.00

Panel Face Attachment

A complete set of panel face block plates consisting of 16, 12, 8 and 4 inches and a corner block plate will be furnished for

\$20.00

Block pallets, pine, special construction, each08

Brick pallets, clear pine, 3-piece construction, each08

and Block Plant Model 8

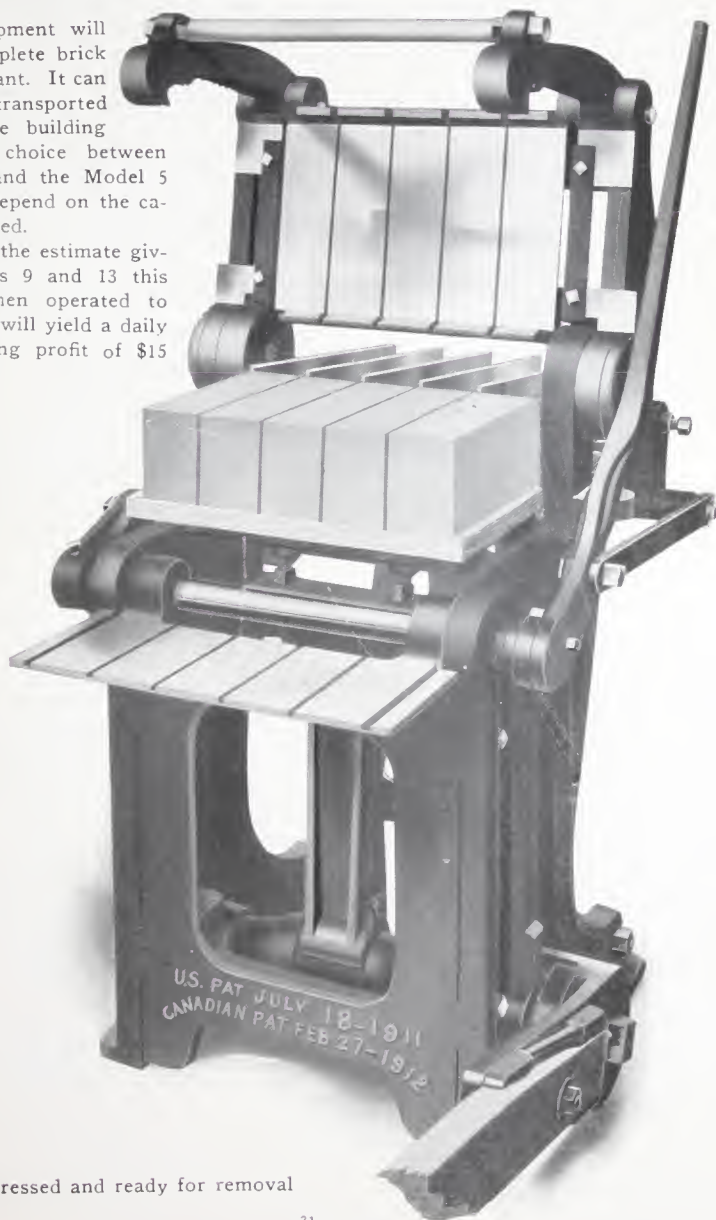
Price F. O. B. Factory,

\$225.00

Shipping Weight 1025 Pounds

This equipment will make a complete brick and block plant. It can be easily transported right to the building site. The choice between this press and the Model 5 Press will depend on the capacity desired.

Based on the estimate given on pages 9 and 13 this machine when operated to its capacity will yield a daily manufacturing profit of \$15 to \$25.



The brick pressed and ready for removal

The Helm Press Model 8 as a Brick Press, Daily Capacity 5000

Those who see the vast possibilities of the pressed cement brick and block industry, yet cannot conveniently start with the Model 5 Helm Press, will find this Model 8 just the machine to start them in the business with every assurance of success.



Ready to receive the material

are readily handled without touching each brick individually when yarding them. In Helm Presses the brick are not turned over in removing them from the machines.

This press weighs 750 pounds. It is built of the best grades of iron and steel, carefully machined and assembled. The face plates are made from polished steel. They can be easily removed and replaced by the ornamental plates.

Ornamental brick can be produced by removing the plain face plates and using plates furnished with the hand mould. The cells are filled with material, then the plates are laid on each cell, the cap is brought down and the regular operation is completed.

The machine is regularly equipped for making brick measuring 2 1/4 x 3 3/4 x 8 inches, weight 4 1/2 lbs.

With the machine in the position shown in the upper view the cells are filled, and the material leveled off. The cap is pulled down and locked and the pressure is applied by bringing forward the long pressure lever. The small lever is then thrown back to remove the blades. The cap is raised and the front gate lowered, leaving the five brick ready for removal on the pallet. This operation is readily completed twice a minute.

The size of this press is indicated by these dimensions: Size of base 17 1/2 x 19 inches; height when cap is down, 36 1/2 inches; height when cap is raised, 46 1/2 inches; length over all to end of pressure lever when down, 10 feet.

Price equipped complete with 5 plain face plates, and end gate, 5 rock face plates and end gate, hopper and 25 sample wood pallets, shipping weight 750 pounds, f. o. b. factory.

\$175.00

A Marvel of Simplicity, Speed and Durability

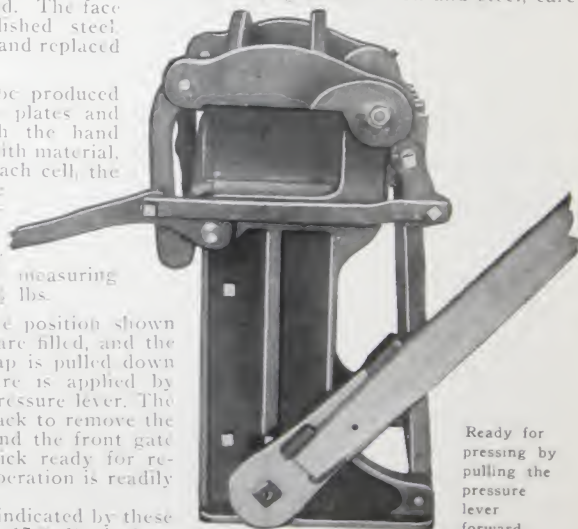
It does the same quality of work as the No. 5. The cost per thousand brick is just the same. Its maximum capacity is one-half as great. With this machine a brick plant is started with a very low investment.

One man at this press if supplied with the mixed concrete and with assistants to take care of the brick will press from 4,000 to 5,000 daily. Each will be a perfect pressed brick of the same quality that our large press makes. With this machine 1,000 brick per day per man can easily be averaged. This includes the labor for the entire process from raw material to yarded product ready for the market. Machine mixing and improved yarding facilities will save from 25% to 50% of this labor.

No Experience is Required to Operate It Successfully

When the five cells are filled, one sweep of the pressure lever positively forms perfect brick. It removes entirely the dependence on the operator to produce well compressed brick. This can be said of no other known method.

The pressure on the five brick is correspondingly as great as that of our larger press. It simply presses five brick at a time instead of ten. The brick are pressed face up and rest on a wooden pallet on which they



Ready for pressing by pulling the pressure lever forward

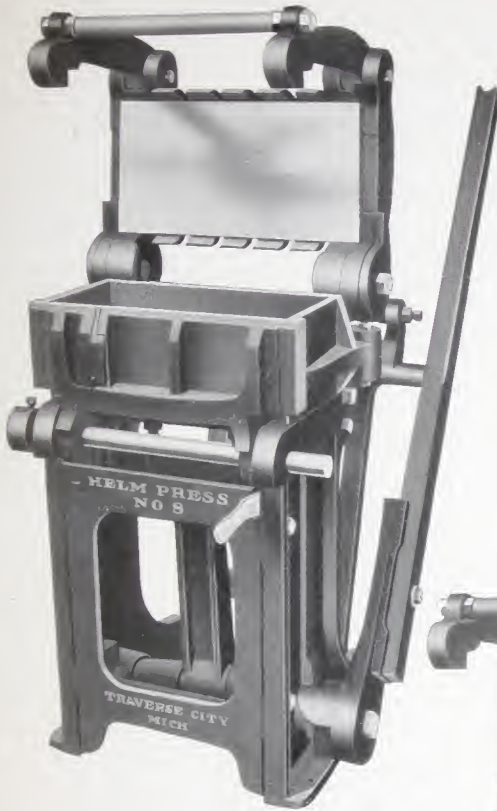
Helm Press Model 8 as a Block Press

For Dry Wall Blocks and
Vencer Blocks

This press has been brought out to meet the demand for a smaller and cheaper press than our Model 5 Helm Press. All the advantages of the Model 8 Press in brick making are retained in this block making equipment. When fitted with the brick and block equipment it is interchangeable for pressed cement brick and dry wall building blocks.

It is extremely simple in operation. Fill the mould, pull down the cap, pull the pressure lever forward and the block is completed.

One man presses 500 blocks daily if supplied with material and assistants to yard the product.



The block designs shown on pages 10 and 11 with the exception of the 24 inch lengths, are all produced on this press. The blocks made are 16 inches long and lay 4x8x16 inches in the wall including the mortar joint. The exact size of the block is 7 3/4 x 15 3/4 inches. The machine is equipped for fractional lengths of 12 inches, 8 inches and 4 inches, return end corner blocks and angle blocks for bay windows of various lengths.

Specifications of the Model 8 Hand Power Block Press

Capacity—500 single course 16 inch or fractional blocks daily.

Equipment—Consists of Model 8 Press fitted with complete block equipment as illustrated on page 30 with 25 block pallets. Shipping weight 900 pounds. Price f. o. b. factory

\$195.00

640,000 Silos Erected in the United States in the Past Six Years

The farmer is thoroughly alive to the possibilities of the silo and there are six million farmers in the United States needing silos. Your community and your county needs its share. You can get this business and make big money.

The No. 8 Helm Press for hand operation will readily make 500 silo blocks in a day and there is a profit of 3 to 5c to the block.

The Profit in a Single Silo

A 16 foot silo, 30 feet high, built up with a single 4 inch wall requires 1,755 blocks and at a profit of 3 to 5c on the block your manufacturing profit on the blocks for this silo will range from \$52.65 to \$87.75. In the territory your plant would supply there should be 25 to 50 silos built each year and the product for two silos can be turned out each week with this press. The blocks can be made in the plant or right at the building site.

What is Required to Make 100 Silo Blocks

1 1-3 Barrels Portland Cement, 1 Yard of Sand and Gravel, 6 to 7 Hours Labor

The above will take care of the requirements for 100 blocks with the circle face made from one part of cement to 5 parts of sand and gravel.

The press is equipped with plain and rock circle face plates and with end gates to form the ends of the blocks so they will conform to the radius and thus make true joints. The blocks are made 4x8x16 inches. They lay 4 inches wide in the wall and 8x16 inches on the face. The groove is provided in the top edge of each block to receive the galvanized reinforcing wire as each course is laid in the wall. Silos are being erected of single walls made in this manner and also with double walls in accordance with our dry wall building system as illustrated in the opening pages of this book. When this system is used the inner wall is made of blocks 4 inches thick and the outer wall 2½ inches thick, the two walls being tied together by metal ties. After the silo is up, constructed either with the single wall or double wall, the inner surface is coated to complete the job.

The silo has come. It has come to stay. The demand is for a silo that is permanent, durable, substantial, that the tooth of time will not touch, that will not burn, that will not rot, that will not shrink, and that will not blow over. The cement silo meets these requirements and costs no more than wood. This may be made a business of itself with a wonderful field or you can make it an additional department to your concrete brick and block plant.

Silo Block Attachment to Fit No. 8 Press, Price \$35.00

This attachment will fit either the No. 8 Brick Press or No. 8 Block Press. It consists of plain face circle plate, rock face circle plate, front gate to form the groove in the block, right and left end gate.

Helm Model 8 Silo Block Press

This equipment consists of the No. 8 press equipped with this silo block attachment but without the brick or regular block attachment. This outfit is intended for those who wish to make silo blocks only, although at any time the brick attachment or regular building block attachment can be secured for this machine. It is equipped with all the plates mentioned above and 25 sample wood pallets. Shipping weight 800 pounds.

Price f. o. b. factory

\$175.00

A Letter From a Silo Builder

Helm Brick Machine Co.,
Cadillac, Mich.

Greene, Iowa.

I am well pleased with my Helm Press. I expect to do a big business this season. I made the blocks for my first silo on an average of a fraction over 50 pieces per hour. I made 242 blocks in 3 hours one afternoon, pressing the blocks and carrying them away myself. The silos I have built have the double wall and give perfect satisfaction. I could use another machine for a while as I have over 12,000 blocks to make before cold weather sets in.

Yours truly, _____

Big Profits in Ornamental Brick

This is a wonderful field and the profits are **big**. There is only a handful of manufacturers of ornamental clay brick but they are waxing rich. They get as much as 25 cents for a single brick. Most of their brick are used for fire places, being too expensive for general use but the ornamental cement brick can be sold much cheaper, therefore offer a much larger field. It is impossible to make a better ornamental brick than those herewith illustrated.

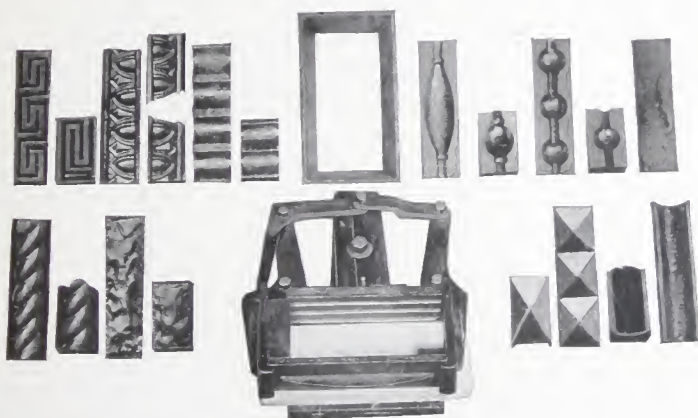


Anyone can make these brick. The brick for a single ornamental fire place sell for \$35.00 to \$250.00. Several large corporations make thousands of dollars annually out of ornamental clay brick for this purpose. You can get this business. You can beat the clay brick prices and then make enormous profits. All you need is this little machine.



The Automatic Brick Mould

The accompanying illustration shows this mould locked ready to receive the material for making ornamental brick with the end of the brick also ornamented. A hopper is used on the mould in filling and forming the brick. The mould is locked and



unlocked automatically by throwing back the lever at the left. Both ends open away from the brick so the end design and front plate may be removed. The brick is then removed on the pallet, a new pallet put in position and the mould is then locked again. The different face and end designs are shown. These are all furnished and a plain face plate also.

Numerous other designs can be made by simply inserting wooden mouldings. There is no limit to the various designs. The plates can be changed instantly to any of the designs.

Every concrete worker should use this mould not only for the immense profit in ornamental brick but because these brick are the very best advertising any plant can have. Samples like the above placed on display, will bring business in other lines also. A single fireplace contract will more than pay for this mould.

This is a wonderful value at a remarkably low price. The plates alone usually sell for \$1.00 each and 50c for end plates, making 16.50 for the plates alone to say nothing of the mould. This complete outfit weighs 70 pounds. The price we quote below makes this mould a leader.

Price f. o. b. factory, for mould with hopper, 10 ornamental face plates, 1 plain face plate and 11 return end plates.....

\$15.00

The Premier Brick and Block Machine

Capacity: 2500 Brick or 250 Blocks

EQUIPMENT: Premier Machine, Model 10, as illustrated, with five plain brick dies and end gate, 25 sample pallets, hopper and complete block equipment as listed and sample block pallet.

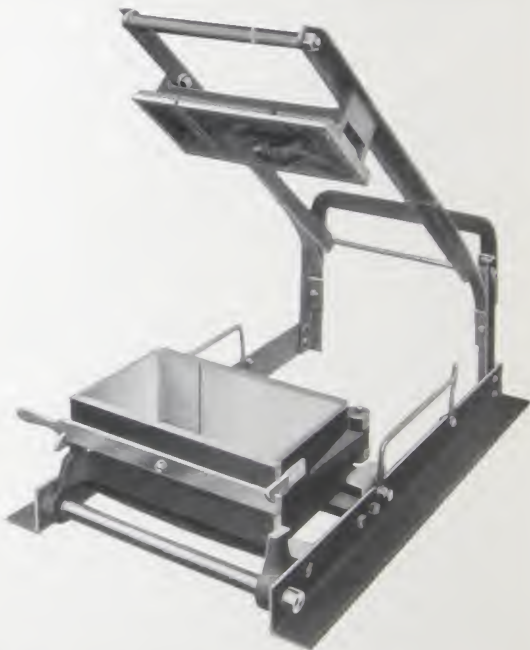
This equipment makes a complete brick and block plant and is just the outfit for anyone wishing to start with cheaper equipment than a Model 5 or Model 8 Helm Press. With this outfit a business can be quickly developed which will call for the use of one of the presses to take care of the trade.

This machine makes all the blocks shown on pages 10 and 11 with the exception of the 24-inch lengths. It makes blocks plain and rock face in lengths of 16, 12, 8 and 4 inches, also corner blocks and bay window angles. The dimensions given include the allowance of $\frac{1}{4}$ inch for the mortar joint.

The method of operation is extremely simple. A pallet is placed in position, the cell box is closed, locked and filled with material. The cap is brought down firmly, this movement being repeated several times. This compresses the block to the proper size. The cap is then raised and the cell box opened to remove the block directly on the pallet. One man at this machine supplied with the material and help for yarding will produce as high as 300 blocks in a day.

The Block Equipment

- 1 Left End Gate
- 1 Right End Gate
- 1 Front Gate
- 1 Rock End
- 1 Plain End
- 1 Blade
- 1 Back Plate
- 1 Rock Mitre End
- 1 Plain Mitre End
- 1 Plain Angle End
- 1 16" Rock Face Plate
- 1 16" Plain Face Plate
- 1 12" Plain Face Plate
- 1 12" Rock Face Plate
- 1 8" Plain Face Plate
- 1 8" Rock Face Plate
- 1 4" Rock Face Plate
- 1 4" Plain Face Plate
- 1 Stripper



Showing the Machine Set Up For Blocks

This machine is furnished for block making only when so desired and the brick attachment can be added later by paying the difference in price.

Premier Block Machine, Model 10, equipped as above with 25 sample block pallets, shipping weight 350 pounds. Price f. o. b. factory..... **\$70.00**

Block Pallets, each08

and Block Plant Model 10

Blocks Daily, Price F. O. B. Factory \$105.00

Shipping Weight, 400 Pounds

With this machine one man will readily turn out 1000 brick in a day and with help for mixing the material and handling the product the capacity can be brought up to 2500 brick.

The brick are made standard size 2 1/4 x 3 1/2 x 8. The valuable lay-up feature of the Helm Press is retained in this machine. The brick are formed right on the pallet and lay up so facing can be quickly and easily applied the same as with any Helm Press.

The brick are not turned over to remove them from the machine. This saves time and prevents breakage. By this system and by using wooden pallets like the samples furnished we absolutely guarantee that no brick will be broken on the pallet.

Construction

This machine preserves the same care in manufacture that is given the larger machines. It is made of the best grades of iron and steel and carefully machined. The brick are formed in cells which are perfectly uniform.

Method of Operation

First the pallet is placed on the table of the machine, the front gate is raised up, and the blades are drawn in by pulling forward the lever at the right. The cells are then filled and then the cap is brought down firmly. This movement is repeated several times. This compresses the five brick in the cells at one operation. While the cap is down the blades are removed by pushing the lever back. The cap is then raised and the front gate is dropped down, leaving the five brick on the pallet ready for removal. This complete operation can be varied on very rapidly. The operation is so simple that any novice can handle the machine successfully. The view at the right shows the machine open with the product all ready for removal.

A Profitable Machine to Operate

With a yard and a half of sand at 60¢ a yard and two barrels of cement at \$2.25 a barrel an operator working alone will turn out 1000 brick worth \$10.00, leaving him \$4.60 as his pay for his day's labor. With a helper at \$2.50 a day the operator will increase his profit \$2.10, giving him a return of \$6.70 on the day's operation.

Showing the Machine Set Up for Brick

This machine can be furnished as a brick machine only. A separate machine could be taken for blocks. This equipment is fully guaranteed the same as the press.

Premier Brick Machine Model 10

Equipment as illustrated above with 5 plain brick face plates and end gate and 25 double wood pallets. Shipping weight 250 pounds, price f. o. b. factory.

\$65.00

Brick pallets, 3 piece construction, each

08



The Utility Brick Machine

This is the lowest priced machine we offer. It is a marvelously simple arrangement. It is built especially for those who may wish to make brick for their own use and for the man who wants to go after the brick business to build up a trade with the least possible investment.

As high as 2,000 brick a day can be produced with it. Three brick are made at one operation. One man working alone will quite readily turn out about 1,000 brick in a day. The brick are formed side face against steel face plates, so as to make a perfect face.

To operate a pallet is placed on the table of the machine, the front gate is raised, and the blades pulled in. The cells are filled with the material and well heaped up on the surface, then with repeated blows with the shovel the material is compressed into the three cells as shown in the illustration above. The top is leveled off. It may be troweled if desired. The cells being only 2½ inches deep, it is not difficult to thoroughly compress the material in them in the manner suggested. To remove the brick on the pallet the blades are pushed back and the front gate lowered. When the operation is completed the machine is in position shown in the view below. This machine is constructed entirely of steel and carefully assembled. It makes a brick which is perfectly true in every respect.

The brick are made 2½x4x8 inches in size. The profit on but a very few thousand brick will bring back the cost of this remarkable little machine. In making brick for a very small building right at the building site many times the cost of this machine will be saved.

Showing the Three Brick Formed and Ready for Removal on the Pallet



With 2 barrels of cement and 1½ yards of sand 1,000 brick are made costing only about one-half as much as the usual selling price of 1,000 clay brick.

The pallets are inexpensive as 4 inch strips of ¾ inch material 27 inches long are used. The three brick rest lengthwise on the pallet and they can be racked together very closely for curing, simply leaving room enough between courses so the brick can be watered. A cheap wooden hopper can be constructed right over the back of the machine so the material can be scraped into the cells very quickly.

This machine is sold under a positive guarantee just as strong as that placed on any Helm machine.

Utility Brick Machine

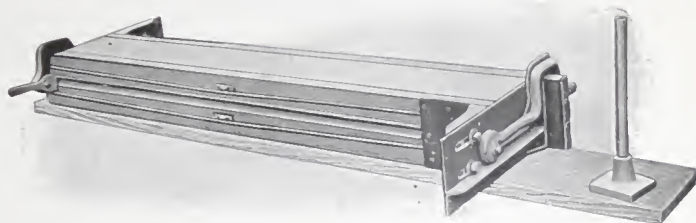
Equipped as illustrated above with one sample brick pallet, shipping weight 100 pounds, price f. o. b. factory.....

\$25.00

Adjustable Sill, Step and Cap Mould

This is a practical working adjustable mould necessary for the special forms of concrete such as caps, sills, watertables, steps, etc. This makes an extremely profitable department in a concrete brick and block plant as these special forms of concrete yield a profit of 100 to 300 per cent. on manufacturing cost.

This mould is well constructed. The ends are made of steel and the hooks of best gray iron. The sides are metal lined, and the upper edge is marked so the adjustment to any length is quickly secured.



It is used with or without pallets. Adjust to the proper size, lower the hook at each end over the sides and lock it by pushing down the little lever. Fill and tamp, placing in reinforcement when desired. To remove mould raise the fastener, lift the hooks and take away each side separately. One end accompanies each side. One man can handle this mould alone.



PRODUCTS FROM THIS MOULD

- | | |
|----------------------|----------------------|
| A—Window Sill | D—Coping |
| B—Window or door cap | E—Step |
| C—Water Table | F—Sewer pipe section |

- | | |
|--------------------|----------------------|
| G—Silo Block | I—Solid Paving Block |
| H—Chimney Block | K—Column Post |
| I—Solid Pier Block | K—Fence Post |

To make these products or any special form just take this mould and fit in it a simple wooden form to make the desired shape. You can make any form desired in wood and insert it in the mould even to making hollow shapes.

The illustration at the right shows three views of this mould. The top view is that of a sill 48x36 inches, the center view is that of a piece of ornamental corner water-table or cornice block; the bottom view is that of a lintel. This can be made any degree of wash by using a board filler similar to the board lying crosswise of mould.

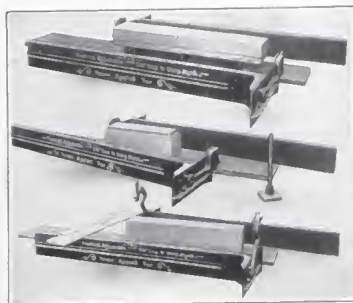
Any of the products illustrated above are made just like this lintel, by simply using wooden mouldings which are easily and cheaply made up as required.

The Equipment

The regular mould is adjustable for any length between 12 inches and 90 inches and any width from 1 inch to 24 inches, up to 7 1/4 inches high. The outfit consists of the mould complete as illustrated above and the tamper.

Shipping weight 200 pounds.

Price f. o. b. factory



\$25.00

The Helm Brick and Block Truck



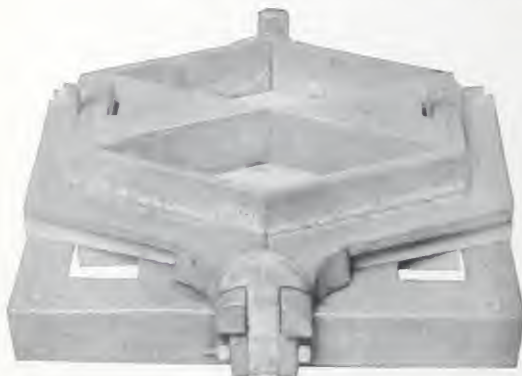
This truck is designed to convey brick and blocks quickly and safely from the machine to the curing racks. In saving of labor it will quickly pay for itself.

Handles 70 bricks or 7 blocks. Constructed of the very best seasoned hardwood with iron reinforcement and two high grade springs to relieve the sudden jar or jolt. Wheels are 19½ inches in diameter with 2-inch face. The spring platform measures 24x60 inches. Shipping weight 135 pounds.

Price, f. o. b. factory

\$12.50

Combination Hexagon and Diamond Tile Mould



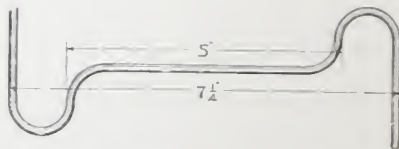
This is a simple, quick acting mould for making one hexagon tile or two diamond tile at one operation. Standard size, 12" hexagon 2" thick. Wood pallets ¾" thick are used. It costs from 3 to 5c to make the 12" hexagons and they sell for 7 to 10c. Ten of these tile will lay a square yard of walk or floor. Tile walks are self draining and very popular wherever used. Each mould is equipped with arms for hexagon tile and filler forms for the diamond shapes. Shipping weight 100 pounds.

Price List

12" machine, complete	\$13.00
16" machine, complete	14.50
18" machine, complete	16.50

Price List on Wall Ties

For the benefit of purchasers of Helm machines we quote prices on the various wall ties which are used with the two-piece blocks, veneer blocks and brick when laid in accordance with the Helm DRY WALL system. These ties are made from double strength No. 9 galvanized wire which will not rust. The ties are 7¼" long over all. One tie is used to each brick or block in every fifth course. Ties are put up 1,000 to the package. Weight per thousand and 80 pounds. Price per thousand f. o. b. factory



\$3.25

Veneer Ties

We furnish a veneer tie suitable for use both on studding and sheathing. These ties are attached with a ¼" or 1" staple. One tie is used in every fifth course of brick or blocks and attached to each studding. They are made of No. 9 galvanized wire and put up in lots of 1,000. Shipping weight per thousand 80 pounds. Price per thousand f. o. b. factory

\$3.25

Helm Product Makes Beautiful Churches



The accompanying illustrations show beautiful churches erected from Helm pressed cement brick and blocks. This product is adaptable to all forms of construction as demonstrated by the various views in this book.

Chas. H. Gelbach, Kooskia, Idaho. "I have a building 25x60 feet, two stories high, built with two-piece concrete blocks with four inch air space between on lower story, and two inch air space on upper story. We have been using the building a little more than two years, and am well pleased with it as it is cool in summer, especially the lower rooms, and is easily warmed in winter. I have never noticed any dampness on the walls, neither have we ever had anything mould or mildew by hanging on the walls, yet we have always had some clothing hanging against them.

The upper rooms have been occupied by the National Forest Reserve as office rooms and the front part of the lower floor is used for the Post-office and the back part we use for living rooms. Many people coming in during the warmest days tell us we have the coolest place in town, and we think they tell the truth as we do not suffer from heat since we moved in this building."

L. E. Burkett, Supt. of Construction, Cleveland, Ohio.

"In April of this year I purchased one of your No. 5 hand power brick and block presses for the State of Ohio to be used at the Toledo State Hospital for the Insane. I have made exhaustive tests of the product, both brick and block, and find them superior in quality and uniform in density, having a very great crushing strength. We have made 100,000 brick for steam line tunnel



and find they make a nice smooth wall, the masons praising them highly, commenting on their laying qualities. Our brick and blocks are all made by patients. I do not hesitate to say that for large institutions or contractors this machine is the best equipment I have found. We have been very successful in coloring brick different colors, and intend using them in facing walls of new buildings under contemplation."

U. S. Government Test on Helm Pressed Cement Brick

The following test was made by Mr. W. F. Hillebrand, Acting Director of the Bureau of Standards, Dept. of Commerce and Labor: Compressive tests on one-half brick, dimensions 4x3 3/4", area 15.5 sq. in., maximum load 37,650 pounds. Compressive strength per square inch 2,425 pounds. This test proves that this product will meet all building requirements no matter how rigid they may be. W. T. Taylor & Sons, Texarkana, Ark. "We are all torn up preparing to move in our new home built with blocks made on the Helm block machine. It is attracting much notice as well as the fine residence we built for Mr. John Brown, one of our citizens, which is satisfactory in every respect. The double wall system appeals to everyone as the logical way to construct a dry, cool house. Anyone who can build at all can build with these blocks as they are cheaper than good lumber or brick.



Helm Products for Substantial Building

To realize the value of Helm products and the DRY WALL Building System for fireproof, frostproof and waterproof construction you need only to look at the opposite page with its school buildings and courthouses representing over a half million dollar investment.

Building committees and architects, hardheaded, practical men have weighed the advantages of these Helm products and used them to their entire satisfaction. There is nothing experimental and no risk attached to the use of these products. To build with them is to simply adopt the building material which has proved by rigid tests and broad use its superiority. Concrete goes into every conceivable form of construction. The Helm system merely adapts this material to its most artistic and most conveniently handled form, such as brick and blocks.

A Half Million Helm Cement Brick Used in this Federal Building

After placing the product to severe tests made by government engineers it was accepted for this job. The following letter shows how satisfactory the material proved to be:

Geo. W. Stiles Construction Co., Mandan, N. D., "As contractors for the new Post



Office, Mandan, N. Dak., we have used cement brick for backing up and found them very satisfactory. By using cement mortar the whole wall sets together and makes a very solid wall. After a brick mason becomes used to these brick he can lay as many of them as any other brick. The small percentage of waste is a big item in their favor. On this building just finished

the waste was less than one per cent. The government test on the cement brick used in this building was very satisfactory."

(No. 1, 2, 3). Wm. Redding & Son, Architects, Denver, Colo. "In reply to your inquiry in reference to the use of cement brick made on your presses and used in the various buildings constructed under our supervision, will state that they were highly satisfactory in every particular, the face brick being uniform in size, uniform in color, and with perfect sharp edges, and the fact that they can be made on the ground eliminates the danger of breaking the edges of the brick, which often occurs on pressed brick which must be loaded and unloaded on cars. The backing brick being made of rather coarse sand, we find the mortar adheres much better to the mortar after the mortar had set. Cement brick made a very pleasing appearance in the wall and the fact that they may be laid up with various colors of mortar and the brick itself may be faced with various colors and effects, gives them a wide range for all types of buildings. We have never been troubled by moisture penetrating cement brick walls or have they been affected by frost. In fact, we were so well pleased with the cement brick made on your presses that we have specified cement brick in a large number of public buildings in Colorado and Wyoming, out of some of which we enclose herewith. We are thoroughly satisfied that the cement brick made on your presses are equal to any brick made, and the price much less than where brick would have to be shipped in. Thus we expect to use cement brick in the future where the same are available."

(No. 8). A Florida School Building. Father Gabriel, Ft. Pierce, Fla. "This morning at last I sent you the desired photos of my school and two pictures which I took lately at the Fern Crest Hotel in Miami, the material for which was furnished by Mr. Couch of Grant

It is the consensus of opinion that our schoolhouse is one of the finest buildings on the East Coast of Florida. Warm in winter, cool in summer, and absolutely dry at all times, it is the best possible endorsement of the hollow-wall system, carried out by the Helm products.

The best proof of the entire confidence we have in the Helm product and the hollow wall system is the fact that we have nearly all the material ready for a \$40,000 convent and boarding school, which we hope to construct before long.

Various building operations which I have under way in some of my distant missions keep me away from home a great deal of the time, and this must explain to you my seeming tardiness in answering your letter."

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Helm Products for Beautiful Homes

The beautiful pressed cement brick and blocks from a Helm Press readily lend themselves to the most artistic architectural treatment. Owners of homes constructed of these pressed brick and blocks and with the Helm DRY WALL system are supremely satisfied.

(No. 12). M. S. Crum, Oroville, Calif. "It gives me pleasure to recommend the concrete blocks as made by you to anyone who is thinking of building. The two houses which you built for me in 1913 of the Dry Wall type of concrete blocks have proved very satisfactory in every detail. I have found them to be warm in winter, cool in summer, and I have had no trouble with leakage whatsoever. The single layer of blocks used as a retaining wall for outside basement entrance are in as good shape today as when put in.

My experience has shown me that this is the most satisfactory type of house to build and that the cost is little more than for a frame building. It has also proved the best type of house for renting purpose for I have no trouble to keep tenants while frame houses in the same neighborhood have remained vacant."

(No. 15). O. P. Decker, Kooskia, Idaho. "Yours of recent date at hand and noted. Will say that I can readily recommend your blocks and brick to anyone wishing to build them a comfortable home. In regard to our home, we consider it ideal for all kinds of weather. It is very easy to heat and is very cool in the hottest weather. You no doubt know that mine is a veneered house, which might make a little difference, but as to the blocks I will say this, they make the nicest and neatest wall of anything I have seen in that line."

(Accompanying view) Blue Cast Magnetic Springs Co., H. O. Wells, M. D., Woodburn, Ind.

"Replying to your inquiry as to whether we were pleased with the brick made with your pressed brick machine, will say that we were highly pleased with pressed brick entering into the construction of our sanitarium and hotel. We hired a couple of students to make the brick on the premises during their vacation and the results, both as to cost of production and quality of brick, were very gratifying.

The outward appearance of our sanitarium is more attractive than if made of ordinary clay brick and we believe will prove more durable. We have found pressed brick to be very good as a non-conductor of heat and cold and the building is exceptionally cool in summer and easily heated in winter. A portion of our building is devoted to giving mineral water and magnetic mud baths requiring a constant and even heat and the material used in construction has proven entirely satisfactory."



(No. 18). Mandan Construction Co., Mandan, N. D. "In reply to your favor of the 25th inst. regarding the cement blocks we have used in the basement in the new residence of L. A. Tavis in this city, will say that we are well pleased with the cement blocks and the dry walls and can recommend the use of them to anyone that wants to build a good dry and warm basement. At any time if we should be in the market again for new basements we will be pleased to use your cement blocks again."

(No. 19). A. Du Bose, Oroville, Calif. "Three years ago I had you build me a house with double walls of concrete blocks and I wish to tell you that it has proved very satisfactory in every detail. It is cool in summer and dry in winter and I have had no expense as to upkeep. In fact, I consider it to be in better shape today than when built. It gives me pleasure to recommend this type of construction to anyone who is considering building if they are looking for permanent satisfaction."

(No. 20). L. T. Palmer, Middletown, Ohio. "My use of your Helm pressed brick in house construction has been very satisfactory. The improved appearance possible with every brick true and perfect is at once noticeable and the possibilities for decorative trimming for corners, porches, etc., are unlimited. The house on Yankee Road, picture of which I send you, has proven to be cool and comfortable in hot weather and dry and easy to heat in cold weather and everybody admires its handsome appearance. I sold it immediately upon completion and the owner and occupant is very proud of his home. He has one of the most substantial and attractive homes in the neighborhood and has a right to feel proud."

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Helm Products for all Classes of Buildings

These products are taking the place of lumber, stone and clay brick in every form of construction.

(No. 22) H. M. Van Deusen, Westfield, Mass. "We have built a hotel which has taken 50,000 brick and all the brick and blocks were made right in the dooryard. It is a dandy and makes brick to perfection, also the blocks. We made different designs of brick, blocks, etc. We are on the finishing part of the building at the present time and will be able to send you a photograph of it before very long. The press does great work, we assure you."

(No. 23) A. W. Cobb, Loveland Estes Park Auto Co., Estes Park, Colo. "In answer to yours of December 7th, 1915, will say that in my opinion there cannot be too much said in favor of the Helm pressed brick and they are fast taking the lead here. They make an excellent building and are far ahead of frame buildings. The chief advantage is, the cement brick grow in strength while other materials depreciate. They have an excellent appearance and make a good showing when faced in colors. The dry wall block system is certainly a grand advance over the old style blocks and are true to the name of dry wall and certainly embody an all important need of cool in summer and warm in winter, making a perfect thermos effect. In cost, the difference in insurance in wood and brick will be covered in two and one-half years giving anyone a chance to gain rather than lose in the process. It is but a question of a few years until frame buildings will be a thing of the past."

(No. 24) H. L. Parker, Architect, Osborne, Kansas. "Am sending you a print of the Municipal Power House at Osborne, Kansas. This building is built entirely of cement blocks and cement brick, all of which were made on the Helm brick machine. The city purchased the machine and made the brick and blocks, mostly with cheap labor; keeping one competent man in charge as foreman. Thus they saved considerable in cost and as they furnished all the material they got the proportions called for in the specifications. The walls are 13 inches thick, a four inch face, one inch air space and backed with an eight inch course, tied together with metal ties. Thus they have a strong, dry building and practically fireproof. The sides are rock faced blocks and the front is plain brick, trimmed with rock faced brick, granite surface, which makes a very neat and attractive building. The blocks and brick made under tremendous pressure of this machine are much more compact and thus better than a tamped block could possibly be. In short, this building is by far the best cement building in the city. The brick front is bonded to the block sides by turning the corner with brick. You are at liberty to publish this letter or any part of it."

(No. 25) T. P. Calkin & Co., Kentville, N. S. "I am pleased to hand you herewith a photo of my brick block erected last year and built entirely of concrete brick supplied by you and made on the Helm brick machine with Canada cement. I may say that the work has been satisfactory from every standpoint. The initial cost was less than I could have built with clay brick and I believe I have a more permanent structure. The successive freezing and thawing that we have in our Nova Scotia winters had absolutely no effect on the material. I can honestly recommend the use of your cement brick to all interested in building operations. When this building was completed there were only two one-horse truckloads of waste. On adjoining block a 27,000 brick job had 45,000 brick purchased to complete. Waste enormous. They were clay brick."

(No. 26) C. F. Lambert, Davenport, Nebraska. "I was so well pleased with this kodak picture of my store building that I herewith enclose you one. Every brick made on the Helm press. Faced with Vermont gray granite. I certainly appreciate the comments of visitors on the beauty of the building. Economy 25 per cent cheaper than other materials. Insurance rates 80 cents. Wooden buildings our town \$3.25. Walls are dry and durable. Daily comments, 'What a beautiful building.' Comfort cool in summer and warm in winter. Every room occupied with pleased renters."

(No. 27) H. T. Marsters, Roseburg, Ore. "In answer to yours regarding the Grand Hotel, the appearance is very fine and will compare with any other press brick now on the market and much cheaper than other facing brick when compared. The walls are perfectly dry inside in winter and are warm in winter and cool in summer. General appearance when complete is second to none."

E. F. Patterson, Roseburg, Ore. "In regard to the building here known as the Grand Hotel which I erected for Mr. H. T. Marsters, will say the outside appearance of the building could not be better. The walls are faced with rock faced cement brick made on your press. There are several pressed brick buildings here but the verdict is in favor of the cement brick. There is no question about the durability. We have lots of rain here in winter and there is no dampness through the wall. The building is cool in summer and warm in winter."

(No. 28) J. M. Scanland, Supt., Montana State Hospital, Warm Springs, Mont. "Enclosed please find picture of our engine room and smoke stack, both being constructed of concrete blocks made by your machine. The stack is 92 feet from the ground to top, 10 feet diameter of base outside measure, 7 feet at top. There is an opening from top to bottom 5 feet in diameter. This stack carries away smoke from two 125 H. P. boilers, one 60 H. P. boiler, and one 80 H. P. boiler. We hope the above information is sufficient."

May 22, 1914. "A good many buildings have been added to this institution since the machine was purchased from you and the brick for same made by your machine."

(No. 29) Horse Barn and Implement Shed, Idaho Industrial Training School, J. T. Humphries, Supt., St. Anthony, Idaho. "You will find enclosed a photograph of our horse barn and implement shed. The horse barn is 120 feet long by 40 feet wide. The implement shed is 84 feet long and 30 feet wide. This building was erected of cement blocks manufactured by the Helm Brick and Block Power Press. We have at the present time several other buildings also erected from blocks manufactured by this machine. The machine has given entire satisfaction."

We are at the present time erecting a hospital, the upper story of which will be pressed brick with a red brick facing which we purchased from the Garden City Sand Company. These bricks when made on the Helm press give the appearance of the best pressed brick. We can heartily recommend the Helm Brick and Block Press."



The Helm Dry Wall System the Best For Any Climate

The Helm pressed brick and blocks and DRY WALL building system were used in these buildings in Florida and Ohio.

(Bay Crest Hotel, Mrs. G. G. Tucker, Owner, Micco, Fla.) "In reply to your inquiry how I am pleased with my concrete block hotel building, I am so well pleased that I never want to build anything but concrete buildings. Have had two cottages of concrete built since building the hotel.

I find the building cool in summer, warm in winter, and free from moisture passing through the walls. I have the hotel building with steam heat, the radiators in the halls, parlor, office and dining room. A fire in the furnace on cold mornings will heat the entire building and the walls will hold the heat through the day unless extremely cold for this country.

If a concrete building costs a little more it will pay the extra cost by not having to paint over or to replace decayed boards. The older the concrete house is, the prettier it looks; not so with a frame building, which requires fresh paint and replaced decayed porticos continually."

Stucco Finish on Helm Blocks

(Jos. S. Small, Piqua, Ohio.) "The house represented by the photograph is built of



blocks and bricks made on the "Helm Press." Walls are double, dry wall system, plastered inside and stuccoed outside. Two inches air space continuous from bottom to top, which has proven since built in 1912 to be perfectly dry at all times, cool in summer and easily heated in winter. It has equal to ten rooms on a side, and is heated by two small sized hot air furnaces. It has been occupied since built as a private hospital by Dr. McManes.

The blocks were made of limestone screenings, rough surface, which insured a good clinch for plaster and stucco. The brick are made of limestone dust and cement, which are made in any color or surface desired. They do not show dampness or discolorment, but with three years of service look as new as when made.

About the People You Do Business With

ALFRED WATSON, JR. President HERBERT KNOWLTON, Vice Pres.
WALTER WATSON, Jr. Cashier GEORGE C. BROWN, Cashier

The Cadillac State Bank
Cadillac, Mich.

December 12, 1917

To whom it may concern:

The officers of the Helm Brick Machine Company are well and favorably known by us and have our entire confidence.

We consider them strictly honorable in every way and in our judgment any dealings which customers may have with the company will be handled in an entirely satisfactory manner and you will find the company strictly up-right and fair in all their dealings.

Yours very truly,

George C. Brown
Cashier

THE HELM BRICK MACHINE COMPANY
CADILLAC, MICHIGAN



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